

THE RAILWAY GAZETTE
A Journal of Management, Engineering and Operation
INCORPORATING
Railway Engineer • TRANSPORT • The Railway News
The Railway Times • Herapath's Railway Journal • RAILWAY RECORD.
RAILWAYS • ESTABLISHED 1835 • THE RAILWAY GAZETTE

PUBLISHED EVERY FRIDAY

AT

33, TOTHILL STREET, WESTMINSTER, LONDON, S.W.1

Telegraphic Address: "TRAZETTE PARL., LONDON"

Telephone No.: WHITEHALL 9233 (12 lines)

Branch Offices:

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Telephone: Central 3101BIRMINGHAM: 81, EDMUND STREET
Telephone: Central 3049

Annual subscription payable in advance and postage free

British Isles and Abroad £2 5s. 0d.

Single Copies One Shilling

Registered at the General Post Office, London, as a Newspaper

VOL. 90 No. 4

FRIDAY, JANUARY 28, 1949

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DIESEL RAILWAY TRACTION

The January issue of this RAILWAY GAZETTE publication, illustrating and describing developments in Diesel Railway Traction, will be ready on February 1, price 2s.

OVERSEAS RAILWAYS 1948

A Railway Gazette publication reviewing the present position and development programmes of twenty-four overseas railways

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THE RAILWAY GAZETTE

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Railway Passengers Assurance Centenary

ON our Scrap Heap page this week we reproduce an advertisement which appeared just 100 years ago in our constituent journal, *The Railway Times*, announcing the formation of the Railway Passengers Assurance Company which this year is celebrating its centenary. The occasion is specially noteworthy in both railway and insurance circles—in the former by the completion of 100 years of close co-operation with British railways since 1849, and in the latter for the reason that the Railway Passengers Assurance Company was the pioneer in accident insurance. In an editorial article in the same issue the formation of the company was welcomed. It was pointed out that the existing state of the law restricted the liability of railway companies to cases in which the accident occurred through the negligence of the company's servants. It was obvious that numerous accidents occurred where no such negligence as that necessary to maintain the action could be found. Dependently on the concurrence of the railway companies from whom no opposition was apprehended, a first class passenger could cover for threepence paid in addition to his fare, £1,000 in case of death or a liberal compensation within that limit for personal injury. Similarly, second class passengers on paying twopence and third class passengers on paying one penny, would be entitled to proportionate amounts—£500 and £200 respectively. Policies would be conveyed by stamping each ordinary ticket issued by the booking-clerk with the word "Assured" or some equivalent term on payment of the necessary premium.

Irish T.U.C. Statement on Milne Report

Having considered the Milne Report on Transport in Ireland, the National Executive of the Irish Trades Union Congress has issued a statement recommending that the whole system of rail, road, and waterways transport should be nationally acquired and administered as a public utility. The Executive expresses disagreement with the proposal to reorganise the directorate of Coras Iompair Eireann, but the proposed Central Highways Authority is described as "daring in its conception" and having the virtue that it seeks to establish parity as between the various forms of transport where the construction and maintenance of tracks is concerned. Properly constituted, this Authority would be disposed to approach the whole transport problem in a national as opposed to a sectional manner. "For the first time it would be possible to assess the real against the apparent cost of different forms of transport. Once this information was available there would be a disposition to send traffic by the most economic and expeditious route. Each form of transport having to make its appropriate contribution towards the maintenance of the national highway system would then be competing in more equitable conditions than those hitherto obtaining," it is stated.

"Is the Railway Executive Really Necessary?"

In our last week's issue we published a letter under the above title, suggesting, in effect, that the six railway Regions might be re-organised rather on the lines of State-owned companies or corporations, unified by the British Transport Commission which would be similar to a holding company. Under this arrangement the Railway Executive would be eliminated. In a note after the letter we pointed out that provision is made in Clause 5 of the Transport Act, 1947, for the establishment of the Executives; it specifically named those Executives now in being. The Act provided that the number and names of the Executives shall be such as may from time to time be provided by order of the Minister after consultation with the Commission. It is envisaged in the Act that an occasion may arise on which it is necessary to abolish an Executive, for it is laid down that "where the effect of an order of the Minister . . . is to abolish an Executive or functions previously exercisable by an Executive are exercisable . . . directly by the Commission," certain legal provisions are to be made. Presumably, therefore, one or more of the Executives could be eliminated without another Act of Parliament.

Canadian Railway Staff Earnings

The Dominion Bureau of Statistics has issued a preliminary report on statistics of steam railways in Canada for 1947, which includes complete details of the salaries and wages paid to railway staff during the year. The number of railway employees increased from 180,383 in 1946 to 184,415 in 1947, or by 2.2 per cent., and the wage bill rose from \$396,856,901 to \$429,843,142 in the same period, or by 8.3 per cent. Average daily earnings in 1946 were \$7.32, and in 1947, \$7.80. The increase in the annual remuneration was 6 per cent., and the average railway wage compares favourably with that paid by other Canadian industries. Our Canadian contemporary, *Canadian Transportation*, in recording these statistics in a recent issue, lists separate average payment figures for each class of staff under the headings of general and miscellaneous, maintenance of way and structures, maintenance of equipment, and transportation. The highest average is for the transportation group, \$2,810, followed by \$2,438 for general and miscellaneous, the group which shows the greatest variations, from \$8,376 for executives down to \$1,504 for messengers.

* * * *

Transport Commission Publicity

As reported in last week's issue, the British Transport Commission is to set up a Films Division "for the production of public and industrial relations films and other visual material on behalf of the Commission and its five Executives." At a press conference last week Mr. J. H. Brebner, Chief Public Relations & Publicity Officer to the Commission, said that the new Division will amalgamate the film units of London Transport and the former main-line railways into a single organisation, which will be part of the Commission's Publicity Department. A Films Officer is to be appointed to undertake the production of documentary films, including those designed expressly for the instruction and education of transport staff, and other informative material such as film strips, most of which will be produced by a Transport Film Unit, though outside organisations may be called in to help when required. It is intended to circulate the films to schools and societies and institutions both in the United Kingdom and abroad. The Commission is also to set up a Commercial Advertising Division to control the allocation of all poster and other advertising on the vehicles and property of the five Executives. The new organisation, which will begin operation on March 14, 1949, is to take over all the present advertising functions of the Executives except billposting and fixing.

* * * *

Cross-Channel Traffic

With the present difficulties in the way of Continental travel, it is interesting to note that it is now 100 years since a new epoch was started and travel began to assume really large proportions, through the opening of the railway from Paris to Boulogne. This event gave the Boulogne route an advantage over the one to Calais, whose short sea passage had previously made it the favourite. The South Eastern Railway, which had reached Folkestone in 1843 and had secured Parliamentary powers to acquire Folkestone Harbour, ran the packet service under a subsidiary known as the South Eastern & Continental Steam Packet Company, although its ships also covered the Dover-Calais and the Dover-Ostend route. Its fleet in 1848 consisted of eight iron paddlers of between 200 and 300 tons, most of them steaming 11 or 12 knots, and when the French railway was opened they tended more and more to concentrate on the Boulogne service. Although it was to have a very beneficial influence on the tourist and holiday traffic, as well as ordinary business, the first great success of the French railway was in the evacuation of very large numbers of refugees, British and French, from the Revolution which dethroned Louis Philippe.

* * * *

High Speed in Switzerland

An article elsewhere in this issue shows with what remarkable competence the new Series "Re 4/4" electric locomotives of the Swiss Federal Railways are handling lightweight high-speed services. Although weighing no more than 55½

tons each, these machines in ordinary day-to-day running are maintaining speeds of 75 to 82 m.p.h. with loads up to 270 tons where track conditions are suitably straight and level, and the runs detailed in the article give examples of maintained speeds of 60 m.p.h. with 180 tons up continuous 1 in 100 gradients, and no less than 52.53 m.p.h. with a 210-ton train up the long 1 in 55 climb from Lausanne in the Berne direction. As our correspondent points out, the existing Swiss Federal high-speed train service between Lausanne and Geneva, with eight trains daily, allowed no more than from 37 down to 34 min. for a start-to-stop run of 37.4 miles, is probably the fastest inter-city service in Europe today. These lightweight trains, beautifully fitted internally and very well patronised, now are being operated in increasing numbers in Switzerland, and the lightweight coaches also are beginning to appear in the ordinary express services. At the same time it is interesting to record that proportionately high speeds are being developed on a number of the mountain lines also. On a number of the latter it is nothing unusual today for trains of four or five coaches to be hauled up gradients of from 1 in 9 to 1 in 11 with rack-and-pinion assistance, at a speed little short of 20 m.p.h.

* * * *

Brighton to London Schedules

The principal article in the November, 1948, issue of *The Sussex County Magazine*, entitled "Iron Road to Brighton," briefly described the preliminaries to, and the construction and operation of, the London & Brighton Railway. It begins: "Just 50 years ago, on 2nd October, 1898, the first regular 60-min. train service between Brighton and London was instituted. Operating during its early stages on Sundays only. . . ." Other mentions of times between these points include the fastest recorded journey by coach, in 1834, namely, 3 hr. 40 min.; as long ago as 1821, "there were no fewer than 40 coaches operating daily between Brighton and London." The railway was opened for traffic between London Bridge and Brighton on September, 21, 1841, and the second train ever to complete the journey between these stations took only 2 hr. 1 min. for the 50½ miles, including three intermediate stops. Thereafter, the 8.30 a.m. express from Brighton, calling only at East Croydon, was booked to reach London Bridge at 10.15. During the first 57 years of operation, therefore, times in the up direction were cut from 105 to 60 min., whereas in the course of the last 50 years, intensity of line occupation and speed restrictions at junctions—usually three severe and two less severe in the up direction—have neutralised the advantages of modern improvements, including electrification and colour-light signalling, and made it desirable to adhere to the 60-min. Brighton-London schedule today.

* * * *

Iron Road to Brighton

Other points of general interest in the article referred to in the previous note call to mind the fact that, although some six miles of line from Redstone Hill (Redhill) northwards were sold to the South Eastern Railway, the whole of the Norwood (Jolly Sailor) to Brighton section was constructed by the London & Brighton Railway Company. The general planning of the route was entrusted in the first instance to Rennie, but Rastrick was the engineer in charge of the detail plans and of the construction. Work began in July, 1838, and soon afterwards "3,000 men and 600 horses were engaged on the task." In spite of such formidable obstacles as Merstham Tunnel, 1,826 yd. long, Balcombe Tunnel, 1,078 yd., and Ouse Viaduct, 1,446 ft. in length and having a maximum height of 96 ft., the line was opened as far as Haywards Heath by July, 1841. It is significant that, though built to carry only 30-ton locomotives at low speeds, Ouse Viaduct is still up to the heaviest modern loads and 75 m.p.h. speeds. South of Haywards Heath two more tunnels, Clayton, 2,266 yd., and Patcham, 440 yd., had to be completed, but the work was finished and the line opened to Brighton on September 21 of that year, a fine achievement. Engineers may remember that the original line *via* Redhill is quoted—and its gradient profile shown—by the American authority, Wellington, in his great work on railway location, as being one of the most perfectly-graded railways in the world, considering the country traversed.

Tourist Industry Prospects

At a press conference held on January 24, Sir Alexander Maxwell, Chairman of the British Tourist & Holidays Board, who has just returned from a tour of the U.S.A., said that from advance enquiries and bookings he estimated that Great Britain would attract 130,000 visitors from America this year. Based on this figure, income from the American trade alone should be in the neighbourhood of 65 million dollars, against rather less than 50 million dollars last year. Tourists from the United States in 1948 stayed in this country an average of 18 days as compared with only five days in the immediate pre-war years. The number of tourists from all sources in 1949 should be about 560,000, against 505,000, total earnings being estimated at about £50 million. Although competition for the tourist dollar is keener, there is no indication of any falling off in the demand for travel to this country, and, though it has been reported that there is some tightening up of expenditure in what may be called the luxury cruise market, the travel urge among the middle and lower-middle income groups provides a field for development which has hardly been explored as yet. Sir Alexander Maxwell also reports a satisfactory response to the publicity campaign which aims at lengthening the tourist season.

J. H. Thomas, P.C.

THE Rt. Hon. James Henry Thomas, who died at his home at Dulwich on Friday last, at the age of 74, was one of the most colourful personalities in railway trade unionism during the critical years of the fight for official recognition, and also was a prominent figure of his day in British politics. His railway career was spent on the Great Western Railway which he joined at Newport, Monmouthshire (his birthplace), as an engine cleaner at 7s. a week. In 1898, he was sent as delegate to the Annual General Meeting of the Amalgamated Society of Railway Servants (now the National Union of Railwaymen) and began a career which culminated in his becoming a Cabinet Minister—a post from which he fell with dramatic suddenness in 1936. When Richard Bell resigned the Secretaryship of the Union, and his seat as Member of Parliament for Derby, Thomas was chosen as his political successor, but the Secretaryship passed to J. E. Williams. As Assistant Secretary, Thomas did much of the Union work, and was the active negotiator in the contentious days of 1911, when the strike of that year was regarded by railway workers as the most significant step forward towards their recognition. Until the formation of the first Labour Government, Thomas's history is largely that of his Union, and, despite his preference for negotiations, he did not shrink from strike action if he considered his Union's interests required it. In 1921, he was largely responsible for the dissolution of the triple alliance of miners, railwaymen, and transport workers, on the grounds that a general strike would have been a revolt against the Government.

When the first Labour Ministry was formed, in 1924, Thomas became Colonial Secretary. The second Labour Government was constituted in 1929 with Thomas as Lord Privy Seal and Minister of Employment. This was the beginning of the great depression period and it was understood that he would devote special attention to the problem of unemployment. It was then that Thomas in his plans for countering the trade cycle was at his best as a statesman. He made a beginning by exploring the field with which he was most intimately associated, and interviewed railway chairmen and general managers. In a White Paper issued in March, 1930, he stated that the estimated cost of works approved for Government financial assistance in connection with unemployment was £39,325,601, of which railway schemes (excluding docks) accounted for £7,988,203. During the year the figure rose to over £10,000,000 for various works in connection with reconditioning the main-line railways, and £12,000,000 for the London Underground and Metropolitan railways. The further extension of Southampton Docks involved some £3,000,000; the G.W.R. put in hand a scheme at a cost approaching £2,000,000 for the development of modern handling appliances at the South Wales Docks; and the L.N.E.R. had schemes approaching £500,000 for various improvements at Middlesbrough, Hull, and Grimsby. Thomas himself ceased to be responsible for the

work in June, 1930, when he became Secretary of State for the Dominions.

The Labour Government fell in the summer of 1931, and Thomas entered the new National Government, which was repudiated by the majority of the Labour Party, despite its approval by Ramsay MacDonald, their leader. The Derby Labour Party repudiated Thomas, but he fought the seat as an Independent Labour man and the electors remained faithful; he continued to be enormously popular in Derby. Thomas was virtually dismissed by his Union, resigned the political General Secretaryship under compulsion, and forfeited his pension. In the General Election of 1935, he was again returned for Derby, and became Secretary of State for the Colonies, but in the Spring of 1936, his conduct in connection with a Budget leakage resulted in a Tribunal of Inquiry, and he was condemned for indiscretion in his remarks to two friends, although there was no suggestion that he had made personal gain. His public career was finished. He made a dignified personal statement to the House, in which he said that he never consciously gave a Budget secret away. His publications include "When Labour Rules" (1920); "The Red Light on the Railways" (1921), a critical study of railway management; and "My Story" (1937), an interesting, but somewhat rambling survey of his romantic career, written without bitterness, and with considerable breadth of vision.

The Problem of Passenger Fares

THE most striking change in the transport situation last year was the decline in passenger travel on British Railways. Obviously, many people think that railway fares are too high and will go by train only when they needs must. When the British Transport Commission and the Railway Executive saw that the railways were losing their hold on passenger business, various facilities for cheap travel were restored in a hurry, but the main problem of adjusting ordinary fares to suit present-day conditions remains for solution. On later pages of this issue we print an article from a correspondent (who before his recent retirement was an officer of one of the main-line companies) who has studied the subject with painstaking care and has evolved a scheme which, he suggests, would popularise rail travel by providing convenient train services at reasonable fares.

The first part of the article sets out the facts of the case without bias and shows clearly that numerous complications attend any plan for adjusting the general basis of railway fares. The second part of the article propounds the author's scheme for instituting a system of charges on a new basis. The fundamental idea is to divide train services into two classes, (a) ordinary, with an overall average speed of not more than 35 m.p.h., and (b) express, where the speed is 50 m.p.h. or over. Broadly, fares by the ordinary trains would be lower than existing charges, while fares by express trains would be higher for return journeys. Cheap fare facilities would not be given by either ordinary or express trains, but would be confined to special excursion trains. Fares charged by London Transport and competing bus companies would be raised to the level of railway charges by ordinary train.

The proposals are ingenious and embody principles which merit examination by all who are interested in the fares question. If the downward trend of passenger bookings continues during the next few months, it is possible that the Minister of Transport may be induced to authorise the Commission to revise fares, as an emergency measure, before the summer timetable comes into force. In that event, some of our correspondent's suggestions might be found helpful in framing temporary arrangements. His scheme could not be applied exactly as he outlines it, in existing circumstances, but that need not debar it from consideration as a long-term settlement of a problem which concerns the majority of the travelling public intimately.

The main difficulty we see about adopting the scheme, as it stands, is that the theory of fares does not suit the present train services on some important sections of line, and there is little prospect of the timetables being reshaped at an early date, vitally important as we consider that task to be. We

took the 80-mile run from York to Newcastle as a test, because the decline in passenger carryings has been particularly heavy in the North Eastern Region. Between 8 a.m. and 8 p.m., 10 trains make the journey at average speeds varying from 35 to 48 m.p.h. The only train passing over the section which attains an average speed of 50 m.p.h. is the "Tees-Tyne Pullman" from Kings Cross to Newcastle; this new train does not stop at York, but its speed compares unfavourably with the 67 m.p.h. of "The Silver Jubilee" in pre-war years. Slow trains from York to Newcastle were withdrawn about 50 years ago owing to lack of patronage, and it would be impracticable to reinstate them. The ordinary train fare, as defined in the scheme, consequently would be inoperative between York and Newcastle. Yet it is between such places that cheap fares, combined with quick travel, are wanted to meet the competition of road transport by public service vehicle or private motorcar.

Again, our correspondent's proposal to abolish reduced return fares for long-distance journeys may be logical, but would it lead to loss of traffic? He would raise the return fares between London and Glasgow by something like 23 per cent. Would not that increase deter many people from travelling, while intensifying the competition of the motorcoach for third class passengers and of air services for first class passengers? Surely any scheme of charges should be so designed as to encourage the long-distance travel which the railways carried efficiently before the war. They proved then that their best assets were comfort, speed, and reliability.

Suburban passenger traffic is a problem of a different kind. Greatly daring, our correspondent proposes that the charges of London Transport railways and buses, and of competing bus services everywhere should be brought to the same level as main-line railway ordinary fares. It is a drastic remedy and would be sure to raise a public outcry. On the other hand, it is anomalous that London Transport should reduce fares when it takes over—in whole or in part—the working of a section of surface railway, such as the former L.N.E.R. line between Liverpool Street and Woodford. People on that branch now have the benefit of an intensified electric service, but pay on a lower scale of fares than the inhabitants of Ilford and Romford.

Anomalies of this kind would be removed by adopting a uniform scale of fares for all railways within the London Passenger Transport Area, whether the lines are worked by London Transport or British Railways. The figures in the scale might be fixed somewhere between the existing fares of these undertakings. Some London Transport rail fares were always unreasonably low, while British Railways may fail to hold a good deal of their London suburban traffic unless they modify their charges; London Transport's bus and coach fares were understood to yield a substantial net revenue in comparison with the tubes, and the test of their reasonableness is their relation to working costs. It would be unfair to increase bus charges to divert some of their users to railways which are overcrowded during rush hours.

A similar course might be taken with the suburban traffic at large cities like Glasgow, Birmingham, Manchester, and Newcastle-on-Tyne. At each place a suitable scale of rail fares for distances of not more than 20 miles from a central station might be adopted. These scales need not be on the basis adopted for London suburban traffic, but should be framed to meet local conditions and should produce sufficient revenue to cover operating costs. Bus and motorcoach operators seem to have scored by avoiding the tendency of the railways to make a fetish of uniformity in fixing charges. Only the General Post Office can do so with impunity.

In his address to the Institute of Transport on January 17, Mr. Roland Bird spoke about the danger that the Commission might be under pressure to make empirical adjustments in fares soon, in the hope of meeting its obligations under the Transport Act, 1947, without any certainty that the changes would provide adequate and cheap service. A perusal of our correspondent's article will, we feel, convince our readers that certainty in this connection can be ruled out. The Commission will have to settle its policy after considering the representations of its competent advisers. We know its revenue,

but, unwisely in our opinion, its expenditure is kept secret. It is consequently impossible to speak with full knowledge, but it is pretty safe to say that the Commission can furnish adequate and cheap passenger travel only by giving better train services at prices below present fares and simultaneously reducing its working expenses.

* * * *

Regrouping the Argentine Railways

CONCURRENTLY with the change in the names of the Argentine railways as from January 1, which was reported in our November 5, 1948, issue, the Argentine Transport Secretariat has announced that a partial regrouping of lines will take place as part of the rationalisation scheme and with a view to more efficient working.

The following are the changes to be carried out (figures in parentheses enable the lines to be identified on the accompanying map):—

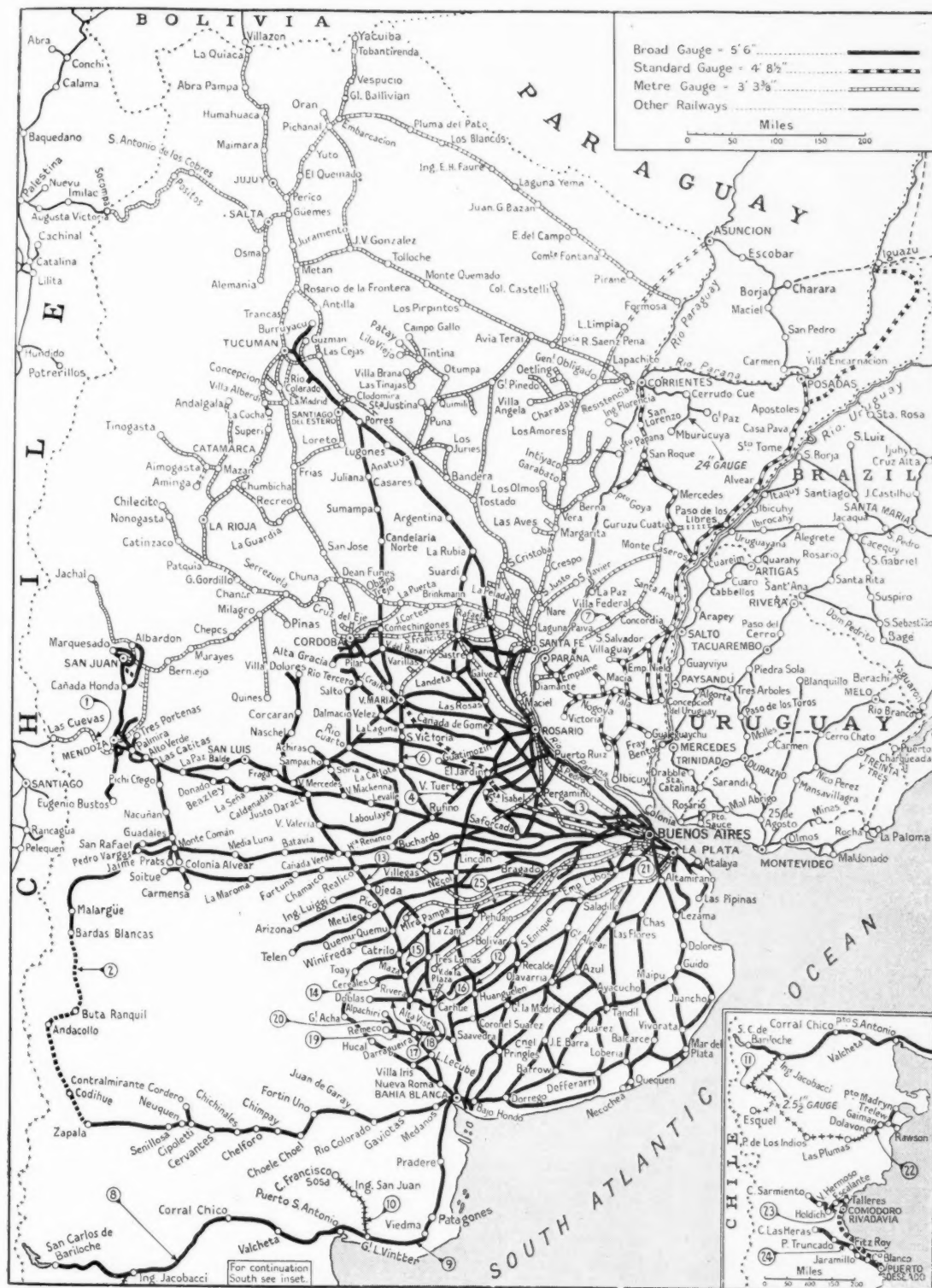
- (a) Lines to be taken over by the Ferrocarril Nacional General San Martín (ex Buenos Ayres & Pacific)
 - From the Ferrocarril Nacional General Belgrano (ex State Railways): The Argentine Transandine Railway (1) and the connecting line between Paso de los Andes (Transandine) and Kil. 1072 (Mendoza F.C.N.G.B.). The line from Pedro Vargas to Malargüe and its future extension to Bardas Blancas and Zapala (2).
 - From the Ferrocarril Nacional General Bartolomé Mitre (ex Central Argentine): The branches between Junín and Pergamino (3) and between Rufino and Venado Tuerto (4).
- (b) Lines to be taken over by the Ferrocarril Nacional General Bartolomé Mitre (ex Central Argentine)
 - From the Ferrocarril Nacional General Belgrano (ex State Railways): The part of the Rosario-Puerto Belgrano mainline between Rosario and Capitán Castro (5).
 - From the Ferrocarril Nacional General San Martín (ex Buenos Ayres & Pacific): The line between Villa María and La Carlota (6).
- (c) Lines to be taken over by the Ferrocarril Nacional General Urquiza (ex Entre Ríos and Argentine North Eastern)
 - From the Ferrocarril Nacional General Belgrano (ex State Railways): The Eastern standard gauge lines (7) between Diamante and Curuzú Cuatiá; San Jaime and La Paz; and Federal and Concordia.
- (d) Lines to be taken over by the Ferrocarril Nacional General Roca (ex Buenos Ayres Great Southern)
 - From the Ferrocarril Nacional General Belgrano (ex State Railways): The lines between San Antonio and San Carlos de Bariloche (8); San Antonio and Patagones (9); General Lorenzo Vinter and Coronel Francisco Sosa (10); and Ingeniero Jacobacci and Esquel (0.75 m. gauge) (11). The part of the Rosario-Puerto Belgrano mainline between Capitán Castro and Bahía Blanca (12).
- (e) Lines to be taken over by the Ferrocarril Nacional Domingo Faustino Sarmiento (ex Buenos Ayres Western)
 - From the Bahía Blanca North Western Section of the Ferrocarril Nacional General Roca (ex Buenos Ayres Great Southern): The branches between Huinca Renancó and Darregueira (13); Maza and Cereales (13); Maza and Tres Lomas (15); Rivera and Salliqueló (16); Rivera and Doblas (17); Rivera and Carhué (18); Darregueira and Remecó (19); and Guatraché and Alpachiri (20).
 - From the Ferrocarril Nacional General Roca (ex Buenos Ayres Great Southern): The branch between Merlo and Empalme Lobos (21).
- (f) Lines to be taken over by the new Ferrocarril Nacional Patagónico
 - From the Ferrocarril Nacional General Belgrano (ex State Railways): The southern lines between Puerto Madryn and Alto de las Plumas (22) and the branch to Rawson; between Comodoro Rivadavia and Colonia Sarmiento (23); and between Puerto Deseado and Colonia Las Heras (24).
- (g) Lines to be taken over by the Ferrocarril Nacional General Belgrano (ex State Railways)
 - The Buenos Ayres Midland Railway (25).

A contributor to our contemporary *The Review of the River Plate* discusses these changes in detail and makes the interesting point that they can be looked on as merely the first step in a long-term policy. The renaming of the railways is shown to be dictated by the possibility of later regroupings, which would make anomalous the old names. We give below the substance of the author's comments:—

The incorporation of the ex-Transandine Railway into the F.C.N. General San Martín is logical and a reversion to earlier working. As the line is concerned mainly with through Argentine-Chilean traffic, the F.C.N. General San Martín is best able to handle it.

The Pedro Vargas-Malargüe line and extensions is complementary to the ex-B.A. Pacific; when it is prolonged southwards a frontier point with the F.C.N. General Roca will have to be determined.

In the case of the Junín-Pergamino line, the change will give better rolling-stock facilities, as the ex-B.A.P. services between Junín and Santa Isabel can be extended to Pergamino with the same locomotives and cars. This gives a reasonable run instead of a branch which was hardly economical to work. The case of the Rufino-V. Tuerto line is of interest from the number of times that this branch has changed owners. Built as the F.C. Gran Sud de Santa Fe y Córdoba in the late 1880s, it was purchased by the Buenos Ayres & Rosario in 1900, as such became part of the Central Argentine in 1908, and under the new arrangement becomes part of the F.C.N. General San Martín (ex-B.A.P.). As this line was worked by



The railways of Argentina, showing lines (indicated by figures in circles) affected by re-grouping

Central Argentine locomotives which were shedded in the B.A.P. shed at Rufino, paying rent, this could not have been a very paying proposition. Now, however, with the transfer of the old Villa María & Rufino between La Carlota and Villa María to the ex-Central Argentine, the Rufino to La Carlota run would not have been economical so that the transfer of the V. Tuerto line was a natural corollary.

The arrangement that the F.C.N. General Mitre (ex-Central Argentine) will work the old Rosario-Puerto Belgrano Railway from Rosario to Capitán Castro (just south of the ex-B.A. Western main line to Toay), is, in the opinion of the writer, a temporary measure dictated by the fact that the only junction with another railway is at Timote on the ex-B.A. Western.

It is expected that when the necessary junctions have been installed at all points of crossing with other broad-gauge lines, the distribution will be as follows: F.C.N. General Mitre (ex-Central Argentine), from Rosario to a junction with the ex-B.A.P. near Dos Hermanos, or (more logically) to a junction with a new link joining Santa Isabel, O. Bemberg, and V. Tuerto; F.C.N. San Martín, from one of the above points to the vicinity of Granada; F.C.N. Sarmiento (ex-B.A. Western), from Granada to Capitán Castro; and F.C.N. General Roca (ex-B.A.G.S.), as now proposed, but, of course, with junctions with all ex-B.A.G.S. lines crossed.

Transfer of the ex-Villa María & Rufino Railway from Villa María to La Carlota is logical, as, with three ex-Central Argentine lines crossing its route, this line has been for years in the nature of a feeder to the Central Argentine. There is a minor technical difficulty, as this line has very light rails and the ex-B.A.P. has had to maintain two classes of specially light locomotives for this service which will have to be transferred with the line as the ex-Central Argentine has nothing suitable. This will entail the F.C.N. General Mitre maintaining a couple of non-standard types or, alternatively, of returning them for repairs to the F.C.N. San Martín at Junín.

The amalgamation of all the 4-ft. 8½-in. lines in Entre Ríos, Corrientes, and Misiones into one group known as the F.C.N. General Urquiza was to be expected, but still leaves the fate of the Buenos Ayres Central Railway, the connecting link to Buenos Aires, undecided. Logically, the F.C.N. General Urquiza should work the Zárate and F. Lacroze section of this line, but the implications of such a move involve the whole question of gauge conversion.

As was to be expected, the F.C.N. General Roca (ex-B.A.G.S.) will work the Patagones to Nahuel Huapi line of the State railways with its branches; it has always been a difficult proposition for the ex-State lines, and locomotives have had to be sent as far as Tucumán for repairs, being replaced by stock hired from the ex-B.A.G.S. Although the shops at San Antonio can deal with some repairs the use of Bahía Blanca in future will certainly ease matters considerably. The ex-B.A.G.S. also apparently retains the working of the ex-Bahía Blanca North Western lines from Bahía Blanca to Darragueira and Toay, together with the branch from López Lecube to Villa Iris.

It is in the new workings by the F.C.N. Sarmiento (ex-B.A. Western) that the writer must confess to a certain amount of mystification as to the exact idea in view. The taking over of the "new" line of the ex-Bahía Blanca North Western Railway, from Huinca Renancó to Darragueira as well as the branches from Maza and Rivera is quite natural and will make for greater efficiency in the working. The inclusion of the Darragueira-Remecó and Guatraché-Alpachiri branches, however, is not quite understood, as these branches are obvious continuations of the lines from Bahía Blanca and Alta Vista which remain under the jurisdiction of the ex-B.A.G.S. A good deal depends on under what jurisdiction the Darragueira running shed is placed, for, should it remain in the Southern area, obviously these three branches should be worked by the F.C.N. General Roca. On the other hand, if this shed comes under the F.C.N. Sarmiento, the working of the Alta Vista branch should have been under this line.

It is possible that here we have a long-term plan and that the State intends to carry out the original concession of a heavy rail line from Estella, on the López Lecube to Villa Iris line, by way of Guatraché, Alpachiri, Doblas, and Alpachiri to Toay, of which only the Guatraché-Alpachiri line has been completed, and the link between Remecó and Perú, on the

direct Toay line. Once this were completed some reshuffling no doubt would be done. It should be remembered that the lines between Alta Vista and Remecó are laid with very light rails so that a similar problem to that of the Villa María and Rufino line is met. A heavy track line between Bahía Blanca and Toay would do much to alleviate the problem of the weight restrictions on the old and heavily graded direct line.

The new arrangement for the line between Merlo and Empalme Lobos is a reversion to the working of the days before 1890 when this line formed part of the old Provincial Western Railway. In practice, for some years, and with the exception of one through train a day, the ex-B.A. Western has worked this branch, so far as passenger service is concerned. In connection with this railway, it is rather surprising that the line to Vagues from Luján has not been handed over to the F.C.N. Sarmiento (this is a very awkward service for the ex-Central Argentine) and that the line between Tablada and Mármol has not been handed to the F.C.N. General Roca (ex-B.A.G.S.). Apart from a good service of trains between Haedo and Tablada, and some two or three trains which continue between Tablada and Mármol, passenger traffic on this line is dead. But, if alterations were made to the junction at Témporley, through suburban passenger trains could be worked from Plaza Constitución and Tablada and/or Haedo, opening up a sparsely populated zone within easy reach of Buenos Aires, and capable of development as a residential district.

As regards the fate of the isolated Patagonian lines and of the Midland Railway, little can be said until the development scheme of the Government has been settled, but in this case again we have the question of change of gauge or total abolition to consider.

* * * *

British Railway Staff in Argentina

THE terms of the purchase-sale agreement relating to the British-owned railway companies in the Argentine Republic signed on February 13, 1947, as recorded in our issue of March 14, 1947, included a provision that the staff whose monthly salaries as at June 30, 1946, did not exceed 1,000 pesos would be retained in their positions by the purchaser. The clause was commented on in our March 7, 1947, issue.

The employees in this category, whether or not they had written working or employment contracts, would be respected by the Government in the enjoyment and exercise of the rights, benefits, and/or privileges that appeared in their favour from the documentary records or evidence emanating from and certified by two high officials of the general managements of the British companies.

It was stipulated also that the Argentine Government would contract for a minimum period of five years the permanent technical employees, who were in the service of the British companies in the Argentine Republic immediately before the date of definite transfer of the assets, which were the object of the agreement, stipulating characteristics and conditions of employment similar to those ruling at that time. Under an agreement made with Señor Miranda, representing the Special Commission, charged with the administration and operation of the railways taken over, these contracts were to have been extended for a further period of five years.

Unfortunately, the aforementioned contracts have not materialised, nor has the staff continued to enjoy the rights, benefits, and/or privileges that were guaranteed to it, and it would now appear to be the avowed intention of the Argentine Government not to fulfil the contracts and to dispense with all but the highly technical British staff.

However, with effect from November, 1948, the Railway Pension Law No. 10,050 was modified to enable members of the staff, both British and Argentine, to obtain partial pensions for voluntary retirement or dismissal, provided that they have been in the service a minimum period of twenty years, irrespective of age. A partial pension amounts to 3 per cent. of the full pensionable salary for each year of service. To qualify for full pension thirty years' service must have been completed and the age of fifty reached.

It should be noted that the British employees with less than twenty years' service are in a particularly invidious position, as neither have they been contracted nor are they eligible for a partial pension. Those with more than twenty years'

service, some of whom have been requested by the management to apply for a partial pension, strongly feel that as the modifications to the Pension Law were extended to both British and Argentine staff, they are entitled to compensation from the Argentine Government for their failure to fulfil the contracts, in addition to the partial pension.

The British members of the staff also would feel much less cause for anxiety if satisfactory assurance were afforded them that pensions will continue as in years past to be paid abroad for those who so desire. In view of the services which, it cannot be gainsaid, they have rendered loyally to the best of their ability and at all times to the development and progress of the country, such an assurance would also be a fitting mark of the Argentine nation's appreciation. Alternatively, it is thought in some quarters that on behalf of those who wish to reside abroad an arrangement might be made, perhaps, whereby the British Government assumes liability for the payment abroad of these pensions, recouping itself from the Argentine Government.

Payment of repatriation is another aspect of the problem which confronts the British-born staff. Particularly is this so in the case of staff entitled to retire on full pension, as neither the ex-British companies nor the Argentine Government seems willing to defray the cost. In so far as staff retiring on partial pension is concerned it is understood that the cost of repatriation will be defrayed by the Argentine Government.

It is to be hoped that a satisfactory solution will be found to these and other perplexities which now mar the peace of mind of so many British employees on Argentine Railways, and so redound to the continuance of the amicable relations which have obtained between the Argentine Republic and Great Britain for so many years.

Shunting Locomotive Costs

(From a Correspondent)

CONSIDERABLE light has been cast on the subject of shunting locomotive costs in the paper presented to the Institution of Mechanical Engineers by Mr. E. L. Diamond entitled: "The Development of Locomotive Power at Speed," and by the report on the operating cost of heavy shunting locomotives, which appeared in the *Journal of the Iron & Steel Institute* and was dealt with editorially in *The Railway Gazette* for June 25, 1948. It would appear that Mr. E. L. Diamond, in his capacity of Mechanical Engineer to the British Iron & Steel Research Association, compiled the report, which forms a valuable addition to the paper of which he was the author.

The vital point in the matter of shunting locomotives, and one that every designer of geared steam or diesel shunting locomotives has been guilty of neglecting, is that the normal-type steam locomotive used for shunting duties can develop a remarkably high horsepower for short periods, by reason of the fact that the horsepower developed rises with the speed. On the other hand, the user of shunting locomotives very frequently forgets that a relatively low maximum speed is required in many works, to enable the normal day's work to be accomplished. If the conventional locomotive can rush banks by getting its train on the move before coming to them, the geared locomotive can start a train on a bank that would trouble the ordinary locomotive. It is clear, however, that for heavy shunting duties in steel works, the conventional locomotive is still the better machine, if only because it has more universal application about the works. The writer feels, though, that the last word has not been said on the subject until some builder has produced a high-power geared steam locomotive. There seems little doubt that for long hauls in works yards where heavy inclines are coupled with poor approaches, the geared locomotive, whether powered by steam or compression ignition engine, still has something to be said for it.

Assuming that the steam locomotive with cylinders driving direct is on balance the best universal haulier, is any variation of this type possible? So far as one can see, the only alternative is the fireless locomotive, and that, of course, has a very limited radius of action. Looking through some

data on fireless locomotives, the writer noted that a Jung fireless locomotive with cylinders 21 in. bore and 16 in. stroke, having an empty weight of 21 tons and a weight of 31 tons in working order, can exert a mean tractive effort of 7,260 lb. and take a train on the level having a weight of 250 tons excluding the locomotive, for 4.7 miles on one charge, the pressure starting at 164 lb. per sq. in. and coming down to 56 lb. per sq. in. This radius of action would appear too short for efficient working, and recharging at about 25 min. per recharge would make a bad hole in the working day. On the other hand, the fireless locomotive is free from the curse of boiler repairs, and it is obvious that in so far as efficiency is concerned, steam generation in fixed plant and its transfer to storage reservoirs on the locomotive will show to advantage in point of coal consumption. The steam locomotive on intermittent duties is most notoriously wasteful of steam and, therefore, of coal. So that the locomotive can meet a call, fire and boiler pressure must be maintained, even though the safety valves are continuously lifting.

The writer wonders whether a solution cannot be found by combining the fireless locomotive with a forced circulation steam generator, capable of materially increasing the radius of action by reducing the pressure drop over a given period. The figures given concerning the Jung locomotive set down the steam consumption per h.p. hr. at 51 lb., so that it would seem that a forced circulation generator capable of generating 10,000 lb. of steam per hr. would keep the locomotive running irrespective of the storage capacity. Standing time varies widely, but the writer feels that a forced circulation unit capable of generating 5,000 lb. per hr. would turn the fireless locomotive into a very different machine. In the first place, intermittent return to the recharging point would be eliminated, or reduced to, say, once per 8-hr. shift. The forced circulation generator certainly would not take up more room than is available for the firebox portion of the locomotive boiler in a shunting locomotive, and additional water would be carried in side, or saddle tanks. It is conceivable that the forced circulation pump would be driven alternatively by a steam, or a small compression ignition engine, preferably the latter. The feed pump to maintain the level in the storage reservoir also would be driven from the auxiliary engine, the feed water going direct into the reservoir and not through the steam generator tubes.

Except in cases where true fireless working was a condition imposed by fire risks and recharging was carried out beyond the danger area, the steam to the locomotive well might be dried by passing through the upper portion of the steam generator in superheater elements taking the form of grid-iron coils. Alternatively, the effect might be produced by allowing steam from the forced circulation portion of the equipment to mix with steam from the storage reservoir, at the regulator. The steam generator could be either coal or oil fired. It will be seen that apart from a considerable reduction in boiler repairs, due to the elimination of the delicate portions of the locomotive boiler, the locomotive will be continuously available for work, up to its maximum capacity, the range of operation at maximum capacity in turn being determined by the pauses between operations and the length of each haul. Control would be infinitely better than that of an ordinary steam locomotive, as practically the entire water reserve present in the storage reservoir could be expended without danger of boiler damage. That being so, the level in the reservoir could be reduced in quantity and pressure maintained by shutting-off the feed pump. Alternatively, when standing, both feed and circulating pumps could be run full-out with a good fire and stored energy replaced ready for the next demand. By admitting the feed water into the storage reservoir, impurities present would be deposited in the form of sludge and it is probable that careful design concerning the entry of the water, coupled with periodical refills from stationary boilers in the form of steam, would maintain the contents of the storage reservoir in a condition in which the tubes of the forced circulation generator would not be troubled. Finally, the problem of replacing, or repairing coils in the generator, would be child's play, as compared with the heavy repairs to firebox stays and tubes, which are the lot of the conventional steam locomotive used on shunting duties where the hauls are heavy and the hours long.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

A Locomotive Runaway

Eastern Bengal Railway,
Paksey, East Bengal,
Pakistan. January 12

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—An unusual accident recently occurred on this railway which may be of interest to your readers. While an SGS Class engine (0-6-0) was hauling a parcels train on the broad gauge single-line, the drawbar nut stripped its thread and the engine became detached from its tender. At the moment of parting, the engine crew (driver and first and second firemen) all happened to be standing on the tender, and the engine ran away unattended.

The train with the tender soon came to a stand with the automatic application of the vacuum brake, but because of a slight defect in the ball valve in the chamber pipe, the engine brakes, after a momentary application, were released again and the engine was able to run on. The regulator was, of course, full open and the vacuum disc in the running position.

This parting occurred in the middle of a block section and the tenderless engine ran on for a distance of $1\frac{1}{2}$ miles, passing through two stations, to the astonishment of the station staff. The progress of the runaway was watched anxiously in the control office. Arrangements had been made to derail it over an isolation switch at the next station on its course, but steam gave out before it reached there and the engine came to a stop just outside the outer signal.

It would be interesting to know if this occurrence is unique. I have certainly never heard of a similar case in my 21 years' railway service.

Yours faithfully,
W. A. H. WATTS,
Deputy General Manager,
West Region, Eastern Bengal Railway

Shorter Trains and More of Them

The Deanery, Stanley,
Falkland Islands, December 21, 1948

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Would the writer of number III of the series in your October 1, 1948, issue please explain (1) why a restoration of the "two-hour" timing between London and Birmingham would involve extra mileage (incidentally on the G.W. route it was the lighter trains—the former 11.10 and 4.10—which were given the extra 5 min.—not the heavy 9.10 or 6.10), and (2) why slip coaches should be regarded with disfavour—on many services there is no need for a stop to pick up?

Your correspondent, Mr. H. C. Casserley, in the same issue hits the nail on the head when he suggests diversion of the London-Birmingham express service entirely to the Western Region route. Former L.N.W. suburban stations have easy access to Paddington by the Bakerloo line and semi-fasts would still connect from Rugby. If the service from Paddington were hourly, alternate trains might well run non-stop to Birmingham and there would be the through trains to Birkenhead. The lighter trains terminating at Wolverhampton could make one or two intermediate stops and include the former slip coaches. Coventry is only two miles further from Paddington via Leamington than it is from Euston via Rugby, and good connections and perhaps through coaches could operate by that route. Perhaps eventually electrification from Paddington to Wolverhampton would be justified—a fairly self-contained line with maybe two loops, namely, Princes Risborough-Oxford-Aynho and Fenny Compton-Stratford-Birmingham Snow Hill. This could bring Oxford and Stratford-on-Avon into the semi-fast service, and without involving extra trains between Didcot and London.

It is surprising that your article should suggest retaining duplicate departures from London at 9.10 a.m. and 6.10 p.m. One would have thought that if an hourly service is not sufficient, then a half-hourly one would be the next step and new trains would fill the gaps at, say, 8.40 and 5.40.

There is a lot to be said for the suggestion of grouping the London termini, and in particular of eliminating Euston instead of rebuilding it, by diverting trains either to Paddington or to Kings Cross and St. Pancras, enlarged into one station. One of your correspondents mentions Marylebone. Why not make this at once into a suburban station only? All long-distance services could run via High Wycombe to Paddington and, in exchange as it were, the present suburban trains for the

Ruislip-Wycombe line now running to Paddington could be diverted to Marylebone.

Your correspondent Kenneth Brown made some interesting suggestions for re-routing some months ago. I would like to suggest two more: (1) electrification of the Olympia-Clapham Junction line and extension of the former Edgware Road-Olympia service to Clapham Junction; (2) Western Region West Drayton to Staines branch trains to use the wartime junction at Staines and run to Staines Junction, where a bay platform could easily be provided on the "up" side. In connection with (2), some time ago a kind of North Circular Railway was proposed from Hemel Hempstead to Hatfield and Hertford. This could be extended to Staines by a new line, following the same valley as the canal, from Rickmansworth (L.M.R.) to Denham, then through Uxbridge to West Drayton (by joining the two Uxbridge branches as was proposed when the second one was built), and so to Staines and the Southern Region.

Yours faithfully,

R. G. R. CALVERT

[London and Birmingham trains, if run again on a 2-hr. schedule, could not afford under present conditions to make the stops necessary to cater for Coventry, Leamington, etc., traffic, which would call for the running of additional trains. It was common knowledge that the Great Western locomotive department wanted the pre-war 2-hr. schedule increased, and timetable difficulties probably accounted for the fact that extra time was allowed only to the 11.10 a.m. and 4.10 p.m. from Paddington. "Slips" are, nowadays, very expensive to staff; they generally result in the towns they serve being given a worse service in one direction than in the other; they cause operating difficulties, and (unless corridor slips were universal) deprive passengers of access to restaurant cars.

If all London and Birmingham traffic were worked from and to Paddington, Coventry could not be given a service via Leamington comparable with that from Euston (13 out of 14 Euston and Birmingham expresses served Coventry in 1939), and our article suggested duplicate departures from London only at certain hours when business traffic is known to be too heavy for one train.—ED., R.G.]

The Schoolboys' Exhibition

Edward Exley (Sales) & Co. Ltd.,
Highland House,

Workshop, Notts. January 14

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The attention of my Board has been drawn to a paragraph on page 26 of *The Railway Gazette* of January 7 headed "British Railways Exhibit at the Schoolboys' Exhibition," wherein it is stated, on the authority no doubt of the Railway Executive, that the model railway on British Railways stand has been constructed by two specially selected employees thereof.

My Board wishes it to be widely known that our associated concern, Edward Exley & Company, Bradford, West Riding, built the three 7-car trains that were operated on this model railway—one each G.W.R., L.M.S.R., and Southern Railway.

Our order for these trains was received from British Railways through Sandford & Company, 1a, Wormwood Street, E.C.2, who built the track, etc., therefor.

Yours truly,

V. BOYD-CARPENTER,
Director

Standardisation of Motive Power

King's College,
Cambridge. January 4

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—This morning we read in our papers that the number of classes of locomotives on British Railways is to be reduced from 400 to 12. This is not unexpected and appears to be the obvious policy for the Railway Executive to adopt. It will be very many years, however, before the task of standardisation is complete, and so far nothing has been mentioned concerning a standard classification system for the 400-odd classes of locomotives now in service. Some individual types are known by a variety of different names, and it was the late L.N.E.R. which was the only railway to adopt a cut and dried method of classification by allotting a letter of the alphabet to each wheel arrangement, followed by a number to denote each individual type. I would like to make a plea for the extension of this practice to all Regions, including the painting of the class on the buffer beam.

We have already seen some inter-Regional locomotive workings and we are told that this practice is to be increased; therefore a standard system of classification, power, and route availability is essential to efficient operation. The extension

of the late L.M.S. power classification to all Regions already has been announced, but each Region still maintains its own regulations applying to route availability which are quite meaningless where a foreign engine is concerned. The Railway Executive would do well to consider seriously the adoption of the very clear and concise plan laid down by the L.N.E.R. just before nationalisation.

A further step to facilitate inter-Regional locomotive working would be the renaming of certain motive power depots which bear the same name as a depot in another Region, e.g., Leicester E.R. and Leicester L.M.R. To prevent engines straying too far from their home depots, it is desirable for the name of the depot to which they are allocated to be indicated on the engine. The L.M.R. code for depots would become unduly complicated if extended to all motive power depots; the simplest policy would be to follow E. and N.E. Region practice by painting the depot name on the engine buffer beam.

A far greater use must be made of new routes for the operation of both cross-country and main-line trains to ensure more economic operation of British Railways.

Yours faithfully,

H. N. A. SHELTON

Oldest Locomotive in New Zealand

New Zealand Government Railways.
Wellington, November 10

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The issue of your publication for August 20, 1948, featured photographs of old New Zealand Railways "A" class 0-4-0 tank locomotive Dübs No. 648, built in 1873 and still in use at Dunedin. This veteran was one of twelve built for service on the various branch lines in Canterbury, then operated by the Canterbury Provincial Government on behalf of the General Government. Another two locomotives of the same class were built by the Yorkshire Engine Company.

In 1876 the provinces were abolished and the operation of all railways became the responsibility of the General Government in Wellington. Under the 1877 renumbering system, Dübs No. 648 became "A" 66, which number she bore until retired from Government service. The old locomotive was

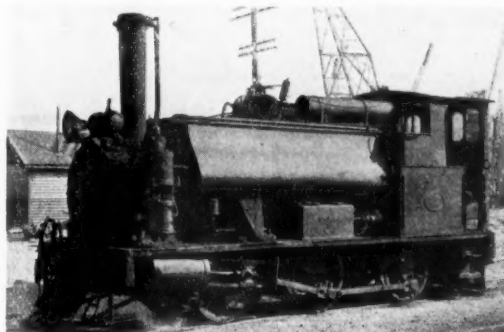


Photo [A. C. Bellamy]

New Zealand Railways locomotive No. 13, built in 1872

used at Oamaru, Timaru, Dunedin, Gore, and Christchurch before being sold in 1904 to the New Zealand Pine Company, which subsequently sold it to the Dunedin City Corporation.

The late Charles Rous-Marten, a well-known railway journalist of bygone days, described the "A" class locomotive as "a most absurd-looking dwarf, a four-wheeled engine weighing eight tons, with 2 ft. 6 in. coupled wheels and cylinders, 8 by 15 . . . a mere mite, a veritable toy locomotive, yet I am bound to say it did surprisingly good work on suitable duty, e.g., on branches and at station shunting. I do not think that more than a dozen or so of these pigmies were built." When Rous-Marten penned those lines for the December, 1899, issue of *The Railway Magazine*, doubtless he did not dream that seventy-five years after they were built at least three of these "pigmies" would remain in existence, two of them in working order.

The aged Dunedin 0-4-0T cannot, however, claim the distinction of being New Zealand's oldest working locomotive. We consider that this honour should go to 0-6-0 saddle tank No. 13 of Class "F," built in 1872 by Neilson & Company (No. 1692) and still hard at work on the Lyttelton wharves. "F" 13 and sister engine "F" 11 (no longer in service) were designed in 1871 by John Blackett, then Acting Engineer-in-Chief of the Public Works Department, for the Dunedin-

Clutha railway. Originally named *Peveril* and *Rob Roy*, these locomotives were the forerunners of a class which eventually totalled 88 engines, built between 1872 and 1888. We wonder whether 76 years' service can be equalled by a locomotive elsewhere in the British Commonwealth, excepting, perhaps, Great Britain. In her present condition, details of "F" 13 are as follow: weight in working trim, 20 tons 5 cwt.; dia. of driving wheels, 3 ft.; working pressure, 160 lb. sq. in.; cyl., 10½ in. stroke by 18 in. dia.

Other interesting veterans still at work in New Zealand are the four Avonside "Fell" type locomotives of Class "H," built in 1875 for the Rimutaka Incline. "Single Fairlie" 0-6-4T "R" 28, built by Avonside in 1878 and until lately in service on the Mines Department's colliery railway at Burkes Creek, Westland, is no longer in use, but has been abandoned for at least six months. The sister engine "R" 29, owned by the Manawatu County Council, lies disused near Himatangi station on the Foxton branch railway. The engine is, we believe, still in working order.

We enclose two photographs (one reproduced) of "F" 13, and we trust that this information will prove interesting both to yourself and, we hope, your readers. We shall be pleased to supply any further material that you may require.

Yours faithfully,

ROY C. MATHEWS,
Advertising & Publicity Manager

Cast Iron at Paddington

51, Bostall Lane,
S.E.2. January 14

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In the review of the new book "A History of Cast Iron in Architecture" in your issue of December 24, 1948, page 712, it is inferred that the arched roofs of Paddington Station are cast iron.

The arched ribs of this roof, built in 1859, are wrought iron having a "built-up" section of plates and angles. The lower portion of the ribs is faced with cast-iron ornamentation, and no doubt this is responsible for the authors' error.

Yours faithfully,

R. G. STONE

The Winsford Accident

9, Keble House,
Manor Fields,
Putney, S.W.15. January 16

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The concluding sentence of Mr. Courtenay Barry's letter in your January 14 issue makes somewhat strange reading. Of course, block working must be properly carried out, and line-side signals must be properly observed, and the relevant regulations must be properly adhered to, if accidents are to be avoided.

Surely, however, it is the fallibility of those concerned with the movement of traffic that has given rise to the extended use of mechanical and electrical devices for added safety, regrettable though this step may be thought by some.

To say, therefore, that if cardinal rules were violated, full track-circuiting would become not only useless but dangerous, seems to me to be most illogical.

I can think of two instances (there are, of course, many others) where it would have averted disaster: the first, at Nash Mills, L.M.S.R., where the signalman at Kings Langley, "knocked out" for a train which he never saw and whose engine had failed in the section, and then irregularly accepted the second train; the second, at Castlecary, L.N.E.R., where the express which was run into was actually standing in the station—adding point to your correspondent's contention that trains within sight of a box have been forgotten at times.

Reverting to the procedure normally followed nowadays when the cord is pulled or the guard operates his "setter," it certainly would be of interest to know the exact wording of instructions issued to drivers of trains consisting of corridor stock, whenever they notice an unusual drop in vacuum—other than, naturally, that caused by a bad steaming engine.

If the orders are to let the train come to a stand in all cases, the man on the 5.40 p.m. from Glasgow acted correctly, but if the driver is allowed to use his discretion (and this, once again, raises the point I made about stopping the train at an unsuitable spot), surely it would have been better to continue running the very short distance to Winsford Station, where there were not only facilities for dealing with the emergency, but also safeguards for rendering harmless potential human fallibility.

As Mr. Courtenay Barry suggests, perhaps an investigation would prove valuable at this juncture.

Yours faithfully,

J. E. L. SKELTON

The Scrap Heap

BRITISH PEER ON CANADIAN
LOCOMOTIVE

Lord Garnock, eldest son of the Earl of Lindsay, who is serving an apprenticeship in a traffic department of British Railways, is spending two months in North America, studying railway practice. On December 23 he was on the footplate of a C.N.R. "Northern" type locomotive hauling the "International Limited" between Montreal and Toronto.

Although Lord Garnock has had footplate experience in Britain and Switzerland, it was his first run in a Canadian engine, and he was soon engaged in a technical conversation with Zotique Dufresne, the regular driver, on the non-stop run of 125 miles between Montreal and Brockville, covered in 2 hr. 5 min. Lord Garnock, who is a contributor to our contemporary, *The Railway Magazine*, said that he had had "a terrific time driving engines on the New York Central and Pennsylvania railways," and spoke appreciatively of the kindness of United States and Canadian railway officials.

100 YEARS AGO

From THE RAILWAY TIMES, Jan. 27, 1849

RAILWAY PASSENGERS' ASSURANCE COMPANY.—(Provisionally Registered.)—Capital, One Million.—Office, 3, Old Broad-street.

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SURGEON.—Barnard Wight Holt, Esq., F.R.C.S., 30, Abingdon-street, Westminster.

SOLICITORS.—Messrs. Holt and Aubin, 26, Bucklersbury.
This Company has been established for the purpose of applying the principle of life assurance to single JOURNEYS ON RAILWAYS, whereby the public will be enabled to ensure compensation in the event of DEATH or INJURY resulting from accidents during transit, on the payment of a very small sum in addition to the fare—the sum of 3d. for a first-class passenger, to ensure £1,000 in case of death; second-class, 2d., to ensure £500; third-class, 1d., to ensure £200; and in case of ACCIDENT ONLY, a sum of money to be promptly paid in proportion to the extent of injury sustained.

Filming in the Piccadilly Tube



A Piccadilly Line underground car used for filming a scene for the forthcoming film "Conspirator." The Aldwych Branch platform at Holborn Station was used for the purpose

TAKE, O TAKE, THY TRAM AWAY
A 1902 tramcar from Southampton has been sent 240 miles to Leeds by lorry—cost £35—by Britain's tramcar enthusiasts, the Light Railway Transport League. They were under the impression that Leeds would find it a free home. But Leeds said yesterday: "There's a mistake somewhere. We're short of room for trams in use. Please take it away." Now the league do not know what to do.—From the "Daily Express."

DOG'S THIRST DELAYS EXPRESS

A passenger was fined the maximum of £5, and 30s. costs, at Willesden on January 10 for pulling the communication cord of a Euston-Wolverhampton express without reasonable cause. A railway detective-sergeant said that the explanation which he gave was: "It was a very hot day. My dog wanted a drink; so did I. I could not get through the luggage van, tried to find a guard, but could not do so. I waited ten minutes. I pulled the cord as I did not think the servants were doing their job properly." The train was delayed ten minutes.

ECONOMY IN STATE PUBLICITY

Mr. Herbert Morrison, as the Minister charged with the general oversight of the Government's information services, has written to departmental Ministers and the Central Office of Information urging that economies shall be made wherever possible in publicity expenditure.

Estimates for 1949-50 are now being prepared in all the departments and this is one of the items of central government expenditure that will be submitted to close scrutiny.

The Treasury prepared last year for the House of Commons Committee on Public Accounts a memorandum showing the aggregate provision made for information services in the Estimates of all Government departments for the year 1948-49. The total figure was £16,697,000. Of this sum about £5,000,000 was provided for expenditure on home services and about £11,500,000 for overseas services. The latter figure included £4,500,000 for the B.B.C. overseas service and £3,000,000 for the Foreign Office.—From "The Times."

COACH AND RAIL RETURN FARES

The following table gives a list of passenger return fares by motorcoach and the comparative first and third class monthly railway return fares:—

London to	Road	3rd class rail	1st class rail
	s. d.	s. d.	s. d.
Aberdare	28 6	46 4	69 6
Aldershot	7 6	9 10	14 9
Bexhill	12 9	17 5	26 2
Birkenhead	29 3	53 0	79 6
Birmingham	19 3	30 6	45 9
Blackpool	29 3	61 10	92 9
Bognor	12 3	18 4	27 6
Bournemouth	17 6	29 4	44 0
Bradford	29 9	52 5	78 8
Brighton	10 0	14 3	21 5
Bristol	17 6	32 7	48 11
Cambridge	10 0	15 11	23 11
Canterbury	10 0	17 1	25 8
Cardiff	26 0	41 10	62 9
Cheltenham	16 3	31 5	47 2
Chepstow	21 9	37 10	56 9
Coventry	17 6	25 7	38 5
Darlington	35 0	63 5	95 2
Doncaster	26 9	42 4	63 6
Dover	11 9	22 0	33 0
Durham	36 9	69 3	103 11
Eastbourne	11 0	17 5	26 2
Edinburgh	50 0	107 6	161 3
Exeter	26 9	46 9	70 2
Fleetwood	30 3	62 8	94 0
Folkestone	11 9	19 11	29 11
Glasgow	50 0	109 0	163 6
Gloucester	17 9	31 5	47 2
Gosport	12 9	21 2	31 9
Halstead	8 3	15 1	23 11
Harrigate	30 3	54 1	81 2
Hereford	23 0	39 6	59 3
Huddersfield	29 3	49 7	74 5
Hull	33 9	48 1	72 2
Ilfracombe	37 3	54 11	82 5
Leeds	29 3	50 6	75 9
Leicester	16 6	26 10	40 3
Liverpool	29 3	53 9	80 8
Maidstone	29 3	50 0	75 0
Manchester	11 9	20 5	30 8
Margate	27 9	46 4	69 6
Merthyr	35 6	65 1	97 8
Middlesbrough	38 0	74 0	111 0
Newcastle-on-Tyne	24 3	38 7	57 11
Newport (Mon.)	17 6	31 9	47 8
Norwich	20 0	33 9	50 8
Nottingham	10 0	17 5	26 2
Oxford	35 0	61 6	92 3
Plymouth	29 3	50 6	75 9
Portsmouth	29 3	50 6	75 9
Preston	11 9	21 2	31 9
Ramsgate	5 9	9 10	14 9
Reading	12 9	20 5	30 8
Rye	11 9	22 9	34 2
Salisbury	7 6	12 8	19 0
Sheerness	11 9	21 7	32 5
Southampton	37 3	71 7	107 5
Sunderland	32 6	54 1	81 2
Swansea	26 3	39 0	58 6
Taunton	8 9	15 1	22 8
Tenterden	32 0	53 9	80 8
Torquay	36 3	67 7	101 5
West Hartlepool	5 9	9 10	14 9
Wokingham	19 0	31 5	47 2
Worcester			

Tailpiece

ASK YOUR DAD!

He stood upon the platform,
His youngster by his side.
A journey was before them—
For both a thrilling ride.
Then both espied a picture
With caption "Ask your dad!"
It caught the eye of father
And of his little lad.
"O tell me," cried the schoolboy,
"About your days at school.
You must have lived austere
In days of grave misrule."
"When I was young," said father,
"A little lad like you,
And hied me to the station,
The first thing I would do
Was make tracks for an object
That now seems like a dream—
You put a penny in it
And out came chocolate cream.
But really you are lucky
To live at such a date,
For though you can't get chocolate,
A penny gets your weight."

R. M.

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

SOUTH AFRICA

Marshalling Yards

Plans are being formulated to eliminate a number of the smaller yards in the Witwatersrand area and concentrate traffic in fewer but larger yards. To increase the capacity of these yards so that they can handle the traffic without delays, they will be mechanised where considered necessary. Eventually, the Reef will need only two large yards instead of seven as at present.

A beginning has already been made with the mechanisation of the Prospect Yard, near Booysens, through which eventually all traffic from Natal via Volksrust, the Free State via Vereeniging, Cape Town via Kimberley and Klerksdorp, and Rhodesia via Mafeking and Krugersdorp, will pass. It is estimated that between 2,000 and 2,500 wagons a day will be handled. Similar plans have been drawn up for Durban and Cape Town, although it is not expected that traffic will increase to such an extent in the near future as to justify mechanisation. It is proposed to make use of the hump principle to speed up handling, and if mechanisation is found necessary later, it can be installed with a minimum of alterations to the yards.

Damage to goods in yards is unavoidable, but the Administration is doing all in its power to minimise damage by providing the most modern methods of handling where these are economically justifiable.

INDIA

Encouraging Operating Progress

The railways have gradually but steadily retrieved the ground lost during the dislocation which followed partition. In recent months operational records of even the pre-partition period have been bettered on most railways. Punctuality statistics particularly reflect this upward trend. On the Eastern Punjab Railway, which was directly affected by the disturbances of 1948, the percentage of mail and express trains rose from 27 in February to 81 in October. On the East Indian Railway, the figure was as low as 21 in December, 1947, but rose to 72 in October, 1948. On the G.I.P. Railway the recovery was nearly as great, from 43 per cent. in December, 1947, to 72 per cent. in November, 1948. There is every indication that the improvement will be maintained in the coming months.

Goods loading has also been intensified. The success of the campaign for intensive use of stock may be gauged by the fact that in September, 1948, approximately 1,000 more wagons were loaded daily than in September, 1947. Coal loadings in Bengal and Bihar coalfields in November averaged 3,011 wagons a day, the best result attained in any month from 1943 onwards.

New Fare Scales

The changeover to the new classification of accommodation, referred to in our December 31, 1948, issue, was made just after midnight on December 31, when squads of painters changed the markings and booking offices issued tickets on the revised basis. The new class I fare is 24 pies per mile (about midway between the old second class fare of 16 pies and first class fare of 30 pies per mile). The new class II fare is 9 pies per mile

for mail and express trains and 7½ pies per mile for other passenger trains; these rates correspond exactly with the old inter class. There has been no alteration in class III fares which remain at 5 pies per mile for mail and express trains and 4 pies per mile for passenger trains. The fare for air-conditioned coaches is 36 pies per mile.

Sleeping accommodation is normally available only in the highest class, but a few class II coaches have been fitted with sleeping berths and the intention is to extend this facility to all class II passenger, when materials and accommodation become available.

Reduction in the number of classes from four to three will simplify to some extent construction and maintenance of coaches besides increasing the effective accommodation. Adjustments in pass regulations, travelling allowance rules, and the classification of waiting rooms have been put into effect.

VICTORIA

Branch Services

Passenger services have been suspended in the following country branches, totalling some 200 miles: Barnes-Balranala; Newtown - Illewarra; Piangil - Yungera; Branxholme-Casterton; Rainbow-Dimboda. Goods services still operate. New articulated railcars are running between Ararat and Hamilton; Melbourne-Daylesford; and Ouyen-Pinnaroo (South Australia). Others under construction are likely to run between Tallarook and Mansfield, and Traralgon and Maffra, and on other branches. These railcars are of two types (102 h.p. and 153 h.p.), in which the passenger portion is articulated on to the power unit; the larger-powered car can draw a trailer. During the Christmas period about 100 electric trailers from the Melbourne suburban lines are borrowed for use in steam trains on the country lines.

UNITED STATES

"New England States" Trains to be Re-equipped

The twin "New England States" trains over the Boston & Albany to and from points on the New York Central between Toledo and Chicago will be re-equipped completely by the end of next Spring. The New York Central placed orders for the new cars in 1945. The cost of the two new trains, including the diesel electric locomotives, will be approximately \$3,500,000.

GERMANY

Improved Train Services

Considerable improvements in the train services in Western Germany are to be introduced as from May 15 next, when the summer timetable becomes operative. There is to be an all-round increase in the speeds of passenger trains. The average speed of D-trains and FD-trains (fast trains and long-distance fast trains) is to approach 62 m.p.h. Intermediate stops are to be shortened to an average of 1½ and 2 min., contrasting with the present long stops which date from before the currency reform in June, 1948, when overcrowding made long intermediate halts imperative. An average of 6 min. is to be allowed at

intermediate stations where steam locomotives have to take water, and an average of 8 to 10 min. is envisaged where locomotives are changed.

More Second Class Coaches

As from May 15 all FD-trains and a greater number of D-trains will include second class coaches. An order for the repair of 600 D-train second class coaches placed with the Belgian industry (see our September 3, 1948, issue) was cancelled after the first batch of 200 coaches had been repaired because the repairs proved to be too expensive in Belgium. Almost all the remaining 400 coaches are being repaired by the German industry as it was possible to secure from abroad the materials required. A repair order, valued at U.S. \$200,000, placed with the Swiss industry, has been cancelled, although no reason was given. The coaches repaired in Belgium and those under repair in Germany are being reserved for members of the occupation administration and forces, but vehicles in service now will be freed for the civilian traffic as the repaired coaches are placed in service.

FRANCE

Paris Passenger Transport Board

The Paris Metropolitan Railway Company ceased to exist on January 1, when the recently-organised Paris Passenger Transport Board took over the Metropolitan underground lines and bus services in the Greater Paris area. At the final meeting of the Seine Department Council before the new authority assumed control, the budget for 1949 was presented. Receipts of the Paris underground and bus systems were estimated at fr. 25,552 million, including subventions of 4,500 million from the State and the Council. The operating expenditure was estimated at 28,260 million and the deficit at fr. 2,703 million. To meet the deficit it was believed that a further rise in passenger fares would be necessary. The authorities have stated since that fares would not be raised.

U.S.S.R.

Electrification in Trans-Caucasia

A further step in the large-scale work of conversion to electric traction in the trans-Caucasian region now in progress was achieved recently when the electrification of the line connecting Poti, the port on the south-eastern coast of the Black Sea, with Samtredya, 28 miles further inland, was completed. Samtredya is the junction where the line for Batumi, the port on the Russian-Turkish frontier, branches from the Tbilisi (Tiflis)-Sotchi-Tuapse main line skirting the coast. The branch for Poti actually leaves the main line at Senaki, a few miles west of Samtredya. Between Samtredya and Poti two automatic substations have been built. Other conversions in the same region were mentioned in our issues of September 24 and November 12, 1948.

Reconstruction of Lvov Main Station

According to a recent message from Moscow, the reconstruction of the main railway station at Lvov (Lwów), formerly the capital of Polish Galicia and now in the Ukraine, was completed before the end of December last. The former building had been completely wrecked in the war. The public rooms of the new building are reported to have walls faced with slates of marble from Kazakhstan and the Caucasian mountains.

The Problem of Railway Passenger Fares and Train Services

A suggested plan for equalising passenger travel over both rail and road services

(From a Correspondent)

BEFORE nationalisation of the railways and most other forms of British inland transport, it was claimed by the advocates of the project that lower charges and better services would result, although no indication was given as to how these desirable ends were to be attained.

So far as the railways controlled by the Railway Executive are concerned, there has been a slight improvement, both in the scheduled passenger train services and in timekeeping, but as to the likelihood of a reduction in passenger fares and merchandise rates and charges, the indications, as a result of falling traffic and increased expenditure on both wages and materials would appear to be all the other way.

During the past year many letters on the subject of passenger fares have appeared in both the daily and the technical press, all of which agree that the present railway fares are too high, particularly when comparison is made with the charge for similar services made by the London Transport Executive (trains and road vehicles)—owned by the British Transport Commission—and by the various provincial bus companies, a large number of which the B.T.C. already either owns or has a considerable financial interest in, and, presumably, will shortly own completely. Any suggestion, however, that the fares of London Transport and provincial bus companies should be raised has been almost universally condemned.

Bus Fares and Receipts

The travelling public finds it difficult to understand why the bus companies are, in the majority of cases, continuing to charge either their pre-war fares, or fares only very slightly in excess of pre-war and yet are able, despite the increases in wages and the cost of materials, to pay good dividends, whilst the railways have not only increased their pre-war ordinary fares by 55 per cent., but have also cut out a large number of cheap facilities and are still unable to pay their way. The main reason for this, apart from the normal growth of travel on account of increased population, is that the increase in railway fares and cancellation of "cheap" facilities imposed as a wartime necessity to curtail public passenger traffic and thus enable the railways to cope with the enormous volume of Service passenger traffic that had to be carried, had the effect of driving a very large number of former rail passengers to road transport, with a consequent increase in receipts to the bus companies sufficient to offset their increased costs. The bus companies thus received an indirect subsidy from the railways.

The Transport Act, 1947, stipulates that the undertakings taken over by the British Transport Commission shall be self-supporting, but it does not stipulate that the undertakings controlled by each of the five Executives should necessarily be self-supporting, and one of the problems the Commission has to consider, when framing the new schedules of charges provided for by the Act, is as to what proportion of its total net revenue should be earned by each of its five Executives.

To the man in the street, the most

obvious point is that where similar services, as regards speed and comfort are provided between the same points, the charges should be the same, whether by surface rail, tube, motorcoach, or bus. On the other hand, it could hardly be disputed that where a much superior service in regard to either speed or comfort or both is provided, higher charges are justified, and the practice is well recognised in the case of passenger road transport, higher charges being made by the express coaches of London Transport (Green Line) and most provincial companies than by their ordinary "stage coach" services between the same points. The railways, on the other hand, for many years have adopted flat rates per mile for passenger fares, regardless of whether the service is provided by the fastest trains with the most up-to-date rolling stock or by the slowest trains with out-of-date rolling stock, the only exceptions being in the case of a few high-speed trains, just before the war when a small supplementary charge was made, and where Pullman cars are provided.

Facilities and Creation of Traffic

In this article, an attempt has been made to bring to bear a fresh, if not entirely new, outlook on the problem of passenger fares by both rail (including tubes) and road services, having regard to the obligations placed on the Commission.

It is frequently stated that "facilities create traffic," and whilst this is admittedly the case where good new facilities are provided in a fairly well populated area previously with only indifferent facilities for travel, in an area where there are already ample and cheap facilities by bus or London Transport railways, the provision of additional rail facilities (including a reduction in fares or the introduction of cheap return tickets) is unlikely to increase the total number of journeys made by passengers in that area; it will probably simply result in a transfer to rail from bus and/or London Transport rail of a considerable number of passengers, with an inevitable reduction in the total net revenue of the Commission as a whole. (In this connection, it is assumed that the Commission will eventually take over the whole of the bus companies in which it has, at present, only a financial interest, as well as any independent competing bus companies).

It should not be overlooked that each successive increase in the level of rail fares has resulted in increased revenue, notwithstanding a reduction in the number of passengers carried, and it is reasonable to assume, therefore, that a decrease in the level of rail fares will result in decreased revenue, it being extremely unlikely that the resulting increase in the number of passengers carried would be sufficient to offset the loss on the passengers previously carried at the higher fares. It is not always remembered that a reduction of 25 per cent. in the general level of fares requires a 33½ per cent. increase in passengers, even to maintain existing revenue, whilst a 33½ per cent. reduction in fares necessitates a 50 per cent. increase in passengers.

A point to be borne in mind is that, owing to petrol rationing, the railways are

at present carrying a considerable volume of passenger traffic, particularly holiday traffic, which they will lose immediately this is abolished or the ration substantially increased, as the private car owner will nearly always use his car for holidays, however low the rail fares may be. A further important point to remember is that by no means all the passenger traffic at present using road transport and tubes, etc., is susceptible to competition from rail, even if fares and services by the latter were on the same level as the former.

Division of Journeys

Some passengers prefer to travel by road in any case, whilst for those to whom cost and journey time are the deciding factors it is probable that, given equality of fares, for journeys up to 5 miles, the bulk of the passengers would use road transport, mainly because, as the buses frequently pass right through the towns and villages and at regular intervals, they are more convenient than the trains, and the time factor for these short distances is relatively unimportant. For distances between 5 and 10 miles, the quicker journey time by train could be expected partially to offset the greater convenience of the buses, whilst for journeys over 10 miles up to about 100 miles, the trains should attract the bulk of the passengers, provided the railway stations are reasonably close to the towns and villages they serve and a regular and fairly frequent service of trains is provided. Most people find motor coach journeys of over 100 miles very tiring and would undoubtedly use the trains if the cost by both modes of transport was the same.

How then should the problem be tackled? One way would be to cease to cater seriously for passengers, other than workmen and season-ticket holders, for distances up to, say, 20 miles of large centres, and on branch lines and "intermediate" stretches of main lines, reducing the train services outside the business hours to skeleton proportions, just sufficient to give connections at junction stations with main-line trains, and leaving the general level of fares unaltered; this would enable certain savings in working expenses to be effected but would result in the transfer to road and tube services of a large volume of passengers which the railways could very well carry. This would seem to be a retrograde policy, as the railways are undoubtedly capable of carrying a much greater volume of passengers than at present, particularly outside the business hours and in mid-week.

Alternative Plan

Another way would be to revert to, or even extend, the pre-war cheap ticket arrangements by introducing cheap day return tickets at single fare for the double journey (available out by all trains after 10 a.m. and returning by any train the same day) between every pair of points where the return journey can be made in the day, in the hope that a sufficient number of passengers would be attracted from road and tube transport to offset the loss on the passengers who would otherwise have paid the monthly return fare of single fare and a third for day return journeys, a very large proportion of the whole for short and medium distance journeys. (This would necessitate a 33½ per cent. increase in the number of such passengers).

In this case, also, the general level of fares would remain unaltered, but the writer considers the method to be unsound and illogical. A third way

set out in some detail below, would be to reduce the standard for all except express trains, to the 1928 level and to abolish all cheap tickets (including monthly return) to the public except by special train. The 1928 level—1½d. per mile, third class—would be still above that of competing road and tube fares, which should be raised to the same level. For express trains, which would afford special facilities, higher fares—lower than existing for single journeys but slightly higher for return journeys—would be charged.

At this point it may be useful to consider the existing "ordinary" fares structure of the railways controlled by the Railway Executive. This is built up on the standard fares authorised by the Railway Rates Tribunal for operation on and from the appointed day (January 1, 1928), namely:—First class, 2½d. per mile; third class, 1½d. per mile. Return fares, double single.

The companies were, however, authorised to institute exceptional fares which, if below ordinary, had to be reported to the Minister of Transport.

Introduction of Cheap Tickets

During the ten years or so before the war, there was a growing tendency to introduce cheap tickets of every variety, the tickets being available in a very great number of cases by all ordinary trains, and, for short journeys, cheap day tickets at single fare for the double journey were obtainable in the majority of cases, particularly in the northern half of the country. Monthly return tickets at single fare and a third were also issued between any two stations, subject to certain minima.

The effect of the foregoing was that, apart from traffic to and from the Continent, traffic at ordinary fares was almost entirely confined to single journey tickets, and as the rate of 1½d. per mile (advanced to 1·575d. per mile in 1937 and 1939) was generally in excess of road and other competing forms of transport, short and medium distance single journeys became almost a negligible quantity.

Another serious effect from the companies' point of view was that the travelling public became "cheap ticket minded" and seldom travelled by rail if there were alternative modes of travel, unless they could obtain a cheap ticket. The railway companies on their side appear to have developed a "return journey complex," so that whereas for single journeys, passengers, with very few exceptions, had to pay the standard fares, practically all return journey passengers were conveyed at a much lower rate, although the services provided were in each case identical. To such an extent had the cheap ticket become the vogue that in the last pre-war year only 13 per cent. of passengers (other than workmen and season-ticket holders) travelled at standard or ordinary fares, and this included practically the whole of the traffic to and from the Continent.

Three Rates for Same Service

The anomalous position was thus created that in the same compartment, passengers holding different kinds of tickets, but receiving precisely the same service, would be paying at three different rates, namely, single journey ticket, 1½d. per mile; monthly return ticket, 1d. per mile; and cheap day ticket, ¾d. per mile.

A further anomaly was that, as mentioned earlier on, with certain small exceptions, the same rate per mile was charged by the slowest trains with the oldest rolling stock as by the fastest and most up-to-date trains; a single journey passenger

would have to pay 1½d. per mile by the slowest train whilst a cheap day ticket holder might be able to perform the same journey at another time in half the time or less by a crack train at ¾d. per mile.

Additions to Rate

Successive additions to the pre-war rate of 1·575d. per mile, third class, in May and December, 1940, July, 1946, and October, 1947, have brought the standard third class rate per mile to 2·44d., and at this rate the railway companies cannot, in the case of short and medium distance single journey traffic, hope to compete effectively with road transport or the railways of London Transport, where the charge per mile for single journeys varies between 1d. and 1½d.

The monthly return rate of 1·63d. per mile, whilst nearer the road and tube rates, is still too high for really effective competition for short distance journeys, and even the "cheap day" tickets, now being re-introduced on a fairly extensive scale, though generally with certain restrictions as to times of travel, at 1·22d. per mile, are frequently higher than the bus fares, particularly where period return fares are issued at about single fare and a third, equal to slightly more than ¾d. per mile. Day return tickets are not as a rule issued by the buses, but they are by the coaches at less than the rail single fare.

Interneine Competition

An illogical and indefensible aspect of the problem is that in the London area the railways and London Transport (all under Government control since September, 1939, and in common ownership from January 1, 1948) are in direct competition, the London Transport trains, buses and coaches competing with the main-line railways in all directions at fares which at the present levels give the latter no chance of competing successfully. In the provinces similar competition exists between the railways and bus companies in which the Commission has considerable financial interest.

The scheme advocated by the writer has as its object the popularisation of rail travel by providing regular and frequent train services at fares commensurate with the facilities provided, and is as shown hereunder:—

1. Train services

The whole of the passenger train services to be divided into two categories, namely:—

- (a) "Ordinary" comprising all local, branch, slow main line and semi-fast main-line services; the overall average speed of these services not to exceed, say, 35 m.p.h.
- (b) "Express" comprising all main-line services where the overall average speed is, say, 50 m.p.h., or over, and to be so described in the public timetables.

The services by ordinary trains to be at least as good (and generally better) in respect of journey time and comfort, as those provided by competing road and tube services. Restaurant and/or sleeping cars would not run on these trains, but corridor or lavatory stock would be provided for medium and long-distance trains and, where stock facilities permitted, buffet cars serving light refreshments at refreshment room prices would be provided on semi-fast trains performing long journeys. Provision would also be made for refreshments to be obtained *en route* by holding long-distance ordinary trains not pro-

vided with buffet cars at junction stations for 15 or 20 minutes.

One Class Trains?

The question as to the desirability of making "ordinary" trains one-class trains (discontinuing first class) is worthy of serious consideration. From the point of view of the general public, passengers who pay first class fares should not only be assured of a seat in a first class compartment, but should be protected against the injustice of passengers paying third class fares using first class compartments, a very prevalent practice which, except on corridor trains on which travelling ticket examiners travel for the whole journey, the railways are unable to stop.

In 1941, one class travel was instituted by all ordinary trains in the London area, and the loss of revenue which this entailed was probably more than compensated by operating advantages. There is no doubt the percentage of first class fare-paying passengers to the number of first class seats provided on trains, other than express, at the present time is exceedingly small.

"Express" trains should consist of the best available corridor coaches, first and second class (the term third class to be abolished except possibly for certain Continental services) and restaurant and/or sleeping cars be provided on all express trains; the services should be far superior as to journey time, comfort, facilities for meals, etc., to anything that can be provided by competing road services. As far as practicable, express trains would run at an overall schedule of approximately a mile a minute.

A large proportion of the seats on express trains should be bookable, but a certain number of coaches on each train left unbooked to meet the requirements of casual passengers.

Travelling Conductors

Conductors should travel on all express trains to attend to the comfort of passengers; to ensure that all passengers hold the correct tickets and secure the seats they have booked, and to see that passengers who have paid for first class accommodation obtain it.

For these superior services, fares in excess of those charged by ordinary trains or competing road services would be charged, but passengers paying these higher fares would be sure of obtaining the superior service for which they had paid.

"Ordinary" trains serving intermediate stations should, as far as practicable, precede all express trains to junction stations at which the latter call, arriving shortly beforehand and should then follow immediately behind the express trains.

It might be desirable for certain trains to be classed as express for a portion of their journey only, particularly where an express is required to call at several adjacent stations, or where the density of the traffic would not warrant the running of an ordinary train immediately after an express train. In such cases, fares would be charged accordingly.

Finally, the train services, particularly the ordinary, should depart from each station they serve at the same minutes past the hour, whether the service be four per hour, two per hour, hourly, or two-hourly, as the public in these days will not be bothered to consult timetables for short journeys. They should also be as frequent as the available resources permit. "Shorter trains and more of them" would be an appropriate slogan.

2. Basis of fares

	Proposed Single		Ordinary	Single		Existing Monthly Return		Cheap Day†	
	1st d.	2nd d.		1st d.	3rd d.	1st d.	3rd d.	1st d.	3rd d.
Ordinary, per mile	...	...	1.5	4.07	2.44	2.44	1.63	2.03	1.22
Express, " "	3	2							

* No reduction for return journey

† Where in operation

EXAMPLE:—

London to Glasgow (401 miles)

			Proposed			Existing		
			1st s. d.	2nd s. d.	Ordinary s. d.	1st s. d.	3rd s. d.	
Ordinary	Single	Approximate journey time, 12 hr.	—	—	50 2	—	—	
Express	Single	Approximate journey time, 7 hr.	100 4	66 11	100 4	136 2	81 9	
"	Return		200 8	133 10	—	163 6*	109 0*	

* Monthly

3. Tickets

All stations to be supplied with the necessary sets of ordinary fare tickets. As there would be no reduction for return journeys, only single tickets would probably be necessary, although it could be arranged for return tickets to be issued if specially asked for.

Main-line stations, at which certain express trains call, to be supplied in addition with express fare tickets (first and second class) to other main line stations at which the same express trains call; also with ordinary to express supplement tickets between the same points, for issue in conjunction with ordinary tickets to stations at which the express trains do not call, but where a portion of the journey can be performed by express trains.

Conductors on express trains to issue ordinary to express supplement tickets to passengers holding ordinary tickets; also 2nd to 1st excess tickets to passengers travelling first class with second class tickets. Conductors' tickets to be issued by means of a machine, such as is used by conductors on certain bus companies' services, which automatically records the debit for all tickets issued.

Return journey tickets would, of course, be issued in connection with certain reduced fare facilities, such as H.M. Forces on leave, staff privilege, etc.

4. Cheap Fare Facilities

No cheap tickets to be issued for use by the general public by ordinary or express trains, the basis of the fare being as low as is economically possible.

(Note.—This follows to a large extent the line adopted by London Transport.)

Staff privilege tickets (single and return) as well as a limited number of other reduced rate tickets for certain groups, for example, H.M. Forces on leave, to be issued by both ordinary and express trains.

Cheap return tickets by special trains to be issued as and when considered desirable.

5. Fares charged by London Transport, associated bus companies, and (if possible) other competing bus companies to be adjusted to the approximate level of the main-line railways ordinary fares

EXAMPLES:—

	Miles	Existing fares		L.T. or bus company	Proposed ordinary fares	
		Main line	3rd class		Main line	L.T. or bus company
London and Harrow & Wealdstone	11½	2 2			1 5	
" " Harrow-on-the-Hill	9½			11		1 3
" " Watford Junction	18	3 6			2 3	
" " Watford (L.P.T.B.)	19		2 4			2 5
" " Stanmore (L.M.S.)	13½	2 2			1 5	
" " (L.P.T.B.), approx.	10			11		1 3
A and B	13½	2 10		1 3*	1 9	
C and D	11½	2 5		1 2*	1 6	
E and F	10½	2 4		1 1*	1 4	
G and H	23½	4 11		2 6*	3 0	3 0

* L.T. or associated co's. bus fares

services pay, all unremunerative services should be cut out.

Objections will also probably be made to the proposed dual basis of fares and emphasis laid on the difficulty in preventing the holders of ordinary tickets joining the express trains. It may be pointed out that the Swiss Federal Railways tried a somewhat similar scheme some years ago but had abandoned it on account of this difficulty. The writer, however, holds the opinion that with proper publicity and suitable arrangements at the stations at which express trains would call, this difficulty would not be a serious one in this country, particularly in view of the comparatively small percentage of express trains to the whole.

It is exceedingly unlikely that this, or any other scheme involving reduction in fares, whether by reduction of the standard or by introducing additional cheap facilities, would attract sufficient additional passengers to rail from road and tubes, even to maintain existing railway passenger receipts, whilst the revenue of the London Transport Executive and competing bus companies (all owned by the B.T.C.) would, if their fares were not increased, of course be reduced.

The scheme would, however, provide the travelling public with facilities to travel, at comparable fares, by whichever service—rail, tube, or road—they preferred and so spread the load more evenly over the various forms of transport, whilst the increase of the road and tube fares to the level proposed for rail ordinary fares would certainly maintain and probably increase the total revenue of the B.T.C. from passenger traffic.

TRANSPORT SECURITIES.—The Share & Loan Department of the Stock Exchange has been advised that all the registers kept by the undermentioned bodies representing stock arising from the conversion of the former securities, have been passed to the Bank of England:—

Herefordshire & Gloucestershire Canal
King's Lynn Docks & Railway

All correspondence in respect of the above accounts, therefore, should be addressed to the Bank of England, 18, Finsbury Circus, London, E.C.2.

CHINESE RAILWAY LOAN.—The Hong Kong & Shanghai Banking Corporation announces that bonds for £337,140 of Chinese Government 5 per cent. Hukuang Railways sinking fund gold loan, 1911, were drawn on December 7, 1948, at the London office, and in terms of the loan agreement become due for redemption at par on June 15, 1949. Redemption will be subject, however, to the provisions of the Chinese Government offer published on April 5, 1937, and interest thereon will cease to accrue on the bonds becoming payable and on provision having been made for their payment.

UNITED RAILWAYS OF THE HAVANA & REGLA WAREHOUSES.—Gross receipts for the holding company for the year ended June 30, 1948, amounted to £4,780,155, an increase of £402,192, because of the 20 per cent. rate increase and an increase of £119,161 collected from the Government on account of arrears from the previous year. Total gross expenditure was £4,590,944, an increase of £452,829, giving a total surplus of £189,211. After provision for renewals and debenture interest, there was a loss of £626,065. The adverse balance forward was £16,371,619, compared with a debit of £16,587,314 brought in.

Modern Swiss Electric Locomotive Performance

The new series "Re 4/4" Bo-Bo locomotives of the Swiss Federal Railways, of no more than 56 tonnes weight each, are capable of maintaining speeds of 75 to 82 m.p.h. on level track with a load up to 270 tons, and of climbing a 1 in 55 gradient at 53 m.p.h. with 210 tons

By Cecil J. Allen, M. Inst.T.

IN the issue of *The Railway Gazette* for November 8, 1946, a description was given of the new Bo-Bo locomotives of the Swiss Federal Railways, Class "Re 4/4," of which 26 are being introduced for working the light high-speed inter-city trains in Switzerland. It was pointed out that this specialised design reduced the individual locomotive weights from the 95 tonnes of the 2-Co-1 (Class "Ae 3/6")

the Nyon permanent way check, the net time was 32½ min., representing a start to stop average of 69.0 m.p.h. The schedule was 35 min.

The maximum load for these workings is ten vehicles, and on the writer's return journey this was closely approached with a load of nine, weighing 253 tons tare and 270 tons gross. The additional weight appeared not to make any difference to

we recovered quickly to over 75 m.p.h., and the 18.2 miles from Gland to Renens were run at 75.6 m.p.h., with speed rising to 80 m.p.h. at St. Prex and 82 before Morges, and then eased to 69 for the curves between Denges and Renens. As this train (the 7.8 p.m. for Geneva) is for the Neuchâtel line, there was a slow approach to Lausanne as we crossed from Track 8 to Track 1: but even so the run of 37.4 miles was completed in 35 min. 32 sec, or 33½ min. net (66.5 m.p.h. start to stop). Schedule in this direction was also 35 min.

Between Berne and Lausanne, a section which includes much sharp curvature, some very heavy grades, and single track for 16 miles between Fribourg and Romont, the running, as set out in Table II, was interesting. It will be noted that in the westbound direction No. 413, with a load of 180 tons, maintained an average speed of 60 m.p.h. up three lengths of 1 in 100 gradient, each from 4 to 5 miles in length; elsewhere, except for a maximum of 77 m.p.h. between Bümpliz Sud and Thörishaus, in the first 5 miles out of Berne, speed was severely restrained, and there were slacks at various points to between 50 and 55 m.p.h. over curves of 17½ to 22½ ch. radius. Notwithstanding this, the 56.4 miles from Bümpliz Sud to Pully-Nord were run in 56 min. 53 sec., and the 60.4 miles from Berne to Lausanne were covered in 63 min. 21 sec., start to stop, as against a schedule of 65 min. This train was the 2.50 p.m. from Berne to Geneva.

At 53 m.p.h. up 1 in 55

In the reverse direction, on the 8.30 p.m. from Lausanne (7.50 p.m. from Geneva to Zurich), No. 410 had a seven-coach train of 210 tons gross. The impressive part of the running here was on the tremendous climb out of Lausanne, 10 miles in length, and with the exception of three very short level breaks through stations, and a mile at 1 in 77, entirely at between 1 in 53½ and 1 in 55. As far as La Conversion, speed did not rise much above 40 m.p.h., but it then increased to 55 m.p.h. on the level strip through that station, and settled down to a steady 52-53 m.p.h. on the 1 in 55 till we were slowed severely for permanent way relaying

TABLE I—SWISS FEDERAL RAILWAYS—LAUSANNE-GENEVA
Lightweight Electric Locomotives, Type Bo-Bo, Series "Re 4/4"

Locomotive No. 413				406			
Load, coaches 6				9			
Load, tons tare/full 166/180				253/270			
Distance		Times	± Speeds	Distance	Times	± Speeds	
Miles		Min. sec.	M.p.h.	Miles	Min. sec.	M.p.h.	
0-0	LAUSANNE...	0 00		37.4	35 32	43.7	
2-8	RENENS†	3 29	48.2	34.6	31 41	71.4	
5-2	Denges†	5 29	72.0	32.2	29 40	76.7	
7-8	MORGES†	7 33	75.5	29.6	27 38	77.1	
10.5	St. Prex	9 44	74.2	26.9	25 32	80.3	
13.4	Allaman	11 56	79.1	24.0	23 22	72.0	
15.2	Perroy	13 24	73.6	22.2	21 52	72.0	
16.5	Rolle	14 31	69.6	20.9	20 47	77.7	
18.4	Gilly	15 59	77.7	19.0	19 19	73.7	
21.0	Gland	17 55	80.7	16.4	17 12	60.0	
23.0	Prangins	19 39	69.2	14.4	15 12	41.0	
23.9	NYON	21 25	31.2	13.5	13 32	49.2	
					p.w.s.*		
26.0	Crans	23 41	55.6	11.4	11 13	77.8	
29.2	Coppet	26 09	77.8	8.2	8 45	74.0	
30.7	Mies†	27 20	76.1	6.7	7 32	68.4	
32.2	Versoix†	28 50	60.0	5.2	6 13	60.6	
34.6	Les Tuilleries	30 56	68.6	2.8	3 50	66.7	
36.1	Pregny	32 13	70.2	1.3	2 29	31.4	
37.4	GENEVA	34 17	37.8	0.0	0 00	—	

* 20 m.p.h.

† Average speeds, station to station.

† Slight service slacks—between Renens and Denges, 69 m.p.h.; through Morges (westbound), 68 m.p.h.; between Mies and Versoix, 60 m.p.h.

locomotives previously used on these trains to 56 tonnes, while increasing the one-hour rating from 2,100 to 2,240 h.p., and maintaining the tractive effort at the wheel tread at 30,800 lb. maximum and 17,690 lb. continuously. With a reduced axle-load of 14 tonnes on each axle, it has been possible to increase the maximum permissible speeds round curves, the maximum speed of 78 m.p.h. being allowed on all curves of more than 41 ch. radius.

At 82 m.p.h. with 270 Tons

A recent journey by lightweight trains between Berne and Geneva showed how admirably the new "Re 4/4" locomotives are acting up to these expectations. Table I gives details of trips between Lausanne and Geneva, where the curvature is moderate and the line fairly level. From this, it will be seen that locomotive No. 413, with a six-coach load of 180 tons, started so rapidly down the initial falling grades to Renens as to pass Denges, 5.2 miles, in 5 min. 29 sec.; the 18.2 miles from Renens to Gland, inclusive of easing over several curves, were run at an average speed of 75.7 m.p.h., and at several points speed rose to between 80 and 82 m.p.h. Then came a very severe slowing for permanent way relaying through Nyon, after which speed again touched 82 m.p.h. at Coppet, but was reduced to 60 through Versoix. The Cornavin station at Geneva, 37.4 miles from Lausanne, was reached in 34 min. 17 sec. start to stop, and allowing for

the speeds. Between Coppet and Crans, speed rose to 80 m.p.h.; then followed the severe slowing through Nyon, as in the opposite direction. From here onwards

TABLE II—SWISS FEDERAL RAILWAYS—BERNE-LAUSANNE
Lightweight Electric Locomotives, Type Bo-Bo, Series "Re 4/4"

Locomotive No. 413				410			
No. of coaches 6				7			
Load, tons tare/full 166/180				195/210			
Distance		Time	Notes	Distance	Time	Notes	
Miles		Min. sec.		Miles	Min. sec.		
0-0	BERNE	0 00		60.4	67 53		
2.6	Bümpliz Sud...	3 38		57.8	63 56		
5.6	Thörishaus	6 06		54.8	61 33		
8.2	Flamatt	8 38	1/100	52.2	58 58		
12.0	Schmitten	12 33	Up	48.4	54 58		
15.5	Düdingen	16 01		44.9	51 34		
19.4	FRIBOURG	19 52	*25 m.p.h.	41.0	47 43		
22.9	Matran	23 52	1/100	37.5	43 15		
27.8	Cottens	28 48	Up	32.6	38 20		
32.4	Villaz	32 57		28.0	33 59		
35.4	ROMONT	35 48		25.0	31 11		
38.4	Siviriez	38 52	1/100	22.0	28 02		
41.4	Vauderens	41 51	Up	19.0	25 02		
45.2	Oron	46 06		15.2	20 46		
47.6	PALEZIEUX	48 45		12.8	18 07		
51.3	MOREILLON	52 33		9.1	14 06		
52.8	PUIDOUX-CHEXBRES	54 03		7.6	12 23		
55.2	Grandvaux	56 37		5.2	7 47		
57.9	La Conversion	59 30		2.5	4 45		
59.0	Pully-Nord	60 31		1.4	3 11		
60.4	LAUSANNE	63 21		0.0	0 00		

* Service slack

before Puidoux-Chexbres. Even so, the 9.1 miles from the start to Moreillon occupied no more than 14 min. 6 sec. With the same restraint on speed as in the reverse direction, save for a maximum of 78 m.p.h. after Thörishaus, and a bad slowing to take a crossover at the approach to Fribourg, we covered the 48.7 miles from Moreillon to Bümliz Sud in 49 min. 50 sec., and reached Berne in 67 min. 53 sec., one min. inside the 69 min. schedule. Net time, allowing for both out-of-course delays, was about 65½ min.

These extremely fast bookings, as they certainly are in relation to the grading and alignment conditions, are thus well within the capacity of the new and highly efficient "Re 4/4" locomotives. Examination of the timetable shows that between Lausanne and Geneva there are now one booking in 34 min. (66.0 m.p.h.), three in 35 min. (64.1 m.p.h.), three in 36 min. (62.3 m.p.h.), one in 37 min. (60.7 m.p.h.), two in 38 min. (59.1 m.p.h.), and two in 39 min. (57.5 m.p.h.), so that this is probably the fastest inter-city service in Europe today. In addition, the 4.34 a.m.

out of Geneva is booked to Nyon, 13.5 miles, in 13 min. start to stop (62.3 m.p.h.), and from there to Morges, 16.1 miles, in 15 min. (64.4 m.p.h.). From Lausanne to Berne, 60.4 miles, with the 10-mile climb out of Lausanne included, there are non-stop runs in 65 and 69 min. and runs which include a 1 min. stop at Fribourg in 69, 74, 75, and 76 min. Westbound, the corresponding times are 66 and 72 min. non-stop, and 70 to 73 min. with one or two intermediate stops.

As yet, the ambitious programme for a three-hour schedule over the 178.5 miles between Geneva and Zurich, with stops at Lausanne and Berne, has not been attained, but the best time has come down to 3 hr. 13 min. eastbound, including 5 min. spent at stops, and a timing of 89 min. for the 80.7 miles from Berne to Zurich, and 3 hr. 14 min. westbound. There are now 15 lightweight high-speed services daily between Berne and Zurich, 14 between Berne, Lausanne and Geneva, ten through from Zurich to Geneva (included in the foregoing), and six between Biel, Neuchâtel, Lausanne, and Geneva, including four to and from Basle.

These numbers represent the total number of daily trains in the two directions. In addition, there are the frequent ordinary express trains, in which the new lightweight stock is beginning to appear. The value of the latter over the extremely severe gradients of the Swiss main lines, the Alpine routes in particular, is evident in the reduction in weight per vehicle from an average of 45 to 47 tonnes to an average of no more than 27 to 28 tonnes, without any reduction of seating accommodation.

Punctuality of Lightweight Trains

Lightweight high-speed trains in Switzerland are regarded as independent of the ordinary services to the extent that no other trains are regarded as connections with them: they are therefore operated with strict punctuality and in no circumstances are they held at the start or at intermediate stops for any other trains. These services are extremely popular and are always well patronised. The formation of each train invariably includes one of the new lightweight restaurant or buffet cars.

Aluminium Alloy Rolling Stock for London Transport

Technical advantages expected from the ninety surface line motor cars now on order

THE London Transport Executive's order for 90 surface line motor cars of the latest "R" type, which, as announced in our January 21 issue, are to be built with structures fabricated from aluminium alloy sheets and sections, is believed to be the first large production order for railway carriages in aluminium alloy to be placed in this country. Besides effecting a useful economy in the demand for steel, a number of technical advantages is expected.

Two complete eight-car trains will be formed from these light-alloy cars and operated as units to obtain performance data; the remainder of the cars will be operated in service interchangeably with existing steel cars, to obtain experience of the relative maintenance costs of the two types. Superficially, both the aluminium alloy and the steel cars will appear identical.

Placement of this order is the culmination of a long and careful investigation into the relative merits of mild steel, high tensile aluminium alloys and rustless steel for the construction of car bodies used in intensive urban electric services. Weight, cost, and developments in car construction in other countries were studied and, as a result, an aluminium magnesium silicon heat-treated alloy was decided on.

Saving in weight always has been recognised as important for those services where the acceleration of the train from rest absorbs a high proportion of the total energy consumed. The kinetic energy of a train is proportional to its mass, and the total energy consumption at the train is very nearly proportional also, averaging some 80 watt hours per ton-mile.

It is estimated that the saving in weight per car by the use of this light alloy, will be in the region of 3.1 tons for a car with the same structural rigidity as the existing steel cars. In selecting this particular alloy, the aspects of corrosion and fatigue have been investigated and it is considered that a life at least equal to that obtained from steel cars will be achieved, provided hydrochloric acid washing processes are not used. The stresses will be well within the capacity of the material.

Existing steel cars were designed with the skin, or outer plating, and the structure, or framework sharing the load. Though the same basis will be followed with the light alloy, advantage will be taken of the fact that it is possible to extrude shapes in aluminium alloy, which could not be obtained with the rolling technique applied to steel, and so permit a better disposition of available material to take the stresses imposed on it.

The resistance of this alloy to abnormal buffing stresses has been examined by experiments, which show that when used in a manner comparable with mild steel it will absorb a greater shock within the elastic range.

Reduced Current Consumption

The reduction in weight will be reflected in reduced current consumption, and the control equipment has been so arranged that the operation of the contactors will produce the same curves of acceleration as for steel cars. The balancing speeds also will be the same. Motors and electrical equipment will be of the usual standards and the bogie trucks will be in steel, at least for the present batch of cars, and pending further development work.

The immediate value of the current saving must be calculated on the basis of the marginal cost of current at the train. On this basis, the extra capital cost of these aluminium alloy cars over steel cars should be more than offset by the saving in current costs, assuming, as is expected, that the life and the maintenance costs are the same for the alloy cars as for steel cars. In the longer term the general adoption of the lighter form of construction should enable savings to be made in generating and distribution plant capacity.

The Executive's policy is to replace older stock consisting of both motor and trailer coaches, by motor car trains in which every other axle on the train is a motor axle, that is, one on each bogie. By offsetting the bogie centre towards the motor axle, more than 50 per cent. of the total adhesive weight is motored. This

arrangement allows higher acceleration and an increased frequency of service on busy lines; it reduces the total current consumption, but involves higher maximum demand for current. The lightening of the cars will counteract this increase in demand and so reduce the need for additional generating and substation capacity.

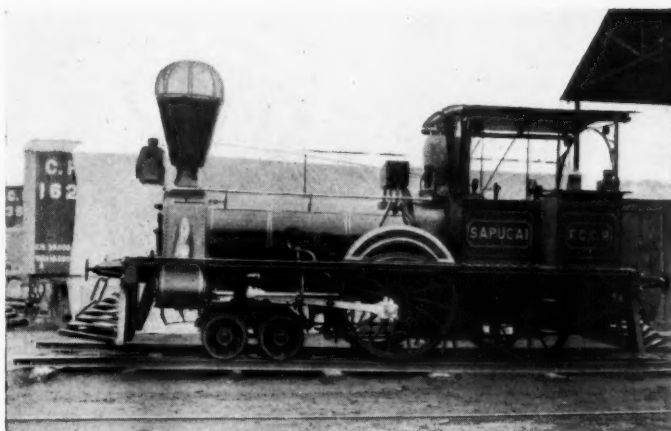
The future policy and technique concerning the use of aluminium for car construction rests partly on the lessons learned from the behaviour of these cars in service, as well as on relative steel and aluminium prices. There is, however, confidence that the prospects of the aluminium alloy car are such as to justify the present project, which, it is hoped, will provide valuable experience.

The main contractor for the new cars will be the Metropolitan-Cammell Carriage & Wagon Co. Ltd., of Saltley, Birmingham, which will collaborate with the Imperial Chemical Industries Limited, Metals Division, Witton, Birmingham. These firms also have co-operated in the investigation and development work leading to the preparation of the new designs.

EQUIPMENT FOR LONDON TRANSPORT BATTERY LOCOMOTIVES.—Seven sets of control equipment and batteries are being supplied to the London Transport Executive by the General Electric Co. Ltd., for use in new battery locomotives for hauling trains equipped for maintenance and construction work—which includes cable laying—on the London Transport system. Nine locomotives of this type already are in service and six of them are provided with G.E.C. electrical equipment. A feature of the control equipment is the provision of 28 notches and three combinations of the four motors with one controller handle. Control is carried out by electro-pneumatic contactors and the large number of notches is necessitated by the requirement of low-speed operation with varying loads involved in the duties these locomotives are required to perform. The batteries are used for traction when power is not available, but the motors can be supplied from the conductor rails when the normal supply is switched on, and provision is made for charging the batteries from the conductor rails.

A Locomotive Veteran in Paraguay

Old engine presented to the nation at an interesting ceremony in the capital



ON October 21, 1861, the first train in Paraguay ran from Asuncion, the capital, to Trinidad, 6 km. On October 21 last, the first steam locomotive to come to Paraguay, and probably that which hauled the first train, was presented by the Paraguay Central Railway to the nation, at Asuncion Central Station.

The locomotive, named *Sapucaí* later in its history, was built for the 5-ft. 6-in. gauge. As the present system is standard gauge, a third rail was laid into the station.

Two trains were formed up in the station yard, ready for the entry into the station. *Sapucaí* headed two old, four-wheel coaches, and, alongside, was a more modern engine with two bogie coaches.

Sapucaí is a 4-2-2 two-cylinder tank locomotive weighing some 18 tons in full working order and unquestionably of British design and make, although there is no trace of the actual maker. Its companion was a North British 2-6-0 tender mixed-traffic locomotive put into service in 1911 and a much abused veteran of the many political upheavals of the past; with a new boiler recently fitted, it is about to begin a new lease of life.

Sapucaí was painted in light brown with gold lining and lettering and from all appearances was complete in every detail. Because of old age and infirmity, it could not make its last journey under its own steam, but it was arranged that its "voice" be heard again by means of a

carefully concealed oxygen cylinder. The engine was decorated with ribbons coloured with the red, white, and blue of the Paraguayan flag and carried on the smokebox door the Paraguayan coat-of-arms. Beneath the smokebox door was a large basket of white lilies and red roses and a small basket of orchids. The other locomotive was also decorated.

The Central Station, which was decked with flags and plants for the occasion, also was illuminated.

Mr. J. C. Jones, General Manager, and Mrs. Jones, received the 700 or more guests, chief of whom were the President of Paraguay and his wife.

In the cab of *Sapucaí* rode Florentin Torres, an old driver and locomotive inspector who remembered the locomotive well in its latter days of service. The two locomotives stopped just opposite the President and Sr. Francisco Fernandez, Electrical Engineer of the railway, and one of its oldest officers, who read an address of welcome to the President and a brief survey of the history of the railway in Paraguay, one of the first, if not the first, railway in South America.

Mr. Jones made the official presentation in name of the London Board of Directors, symbolised by handing the President one end of a ribbon tied to the locomotive. In his reply, the President urged all to remember the initiative shown by Paraguay in the past and called for equal enterprise in the future. The ceremony was filmed and the speeches broadcast.

The President addressed a group of railwaymen and urged them to collaborate to the utmost with the railway, assuring them that their interests always would be safeguarded. An atmosphere of friendliness and goodwill towards the railway and everything British was evident and welcome at a time when some other South American republics appear to be working to eliminate British influence.

Measuring Crank-Pin Settings on Locomotive Coupled Wheels

A double spirit-level quartering gauge developed recently at British Railways, Western Region, Swindon works

THOUGH some difficulty usually is experienced in accurately measuring the setting of crank-pins on locomotive coupled-wheels, it is of great importance in the quest for both smooth running and long life of coupling-rod bushes. To facilitate this, a quartering gauge has been developed at the Swindon works of British Railways, Western Region, which allows the angle of the opposite pins to be measured either in the shop, or in position under an engine. On crank pins of standard dia., it provides a measurement of the length of throw and is used periodically for checking the accuracy of the quartering machines.

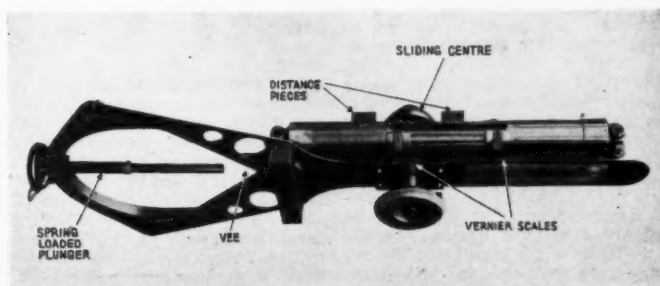
The gauge consists of a light stiffened steel framework with a vee aperture to bear against the surface of the crank pin. A spring-loaded plunger located beyond the vee, holds the gauge so that its centre line is at right angles to the axis of the crank pin. To obtain a true setting on the axle centre-line, a sliding centre projects from the frame into the centre hole of the axle and distance pieces fixed to the frame bear against the end of the axle to ensure that the gauge is set truly perpendicular. Two spirit levels are set on the frame, at right angles to each other, and each level is of high sensitivity, so that each division

of one tenth of an in. represents an inclination of 0.001 in. in 12 in.

In operation, the wheels being tested are set so that one crank pin is vertically below the axle, the wheels being rolled until, with gauge correctly applied and the sliding centre engaged in the axle, the bubble of the horizontal level is dead-central. The gauge then is transferred to the opposite crank pin and is positioned on the pin without movement of the wheels. The other spirit-level is now effective and any error of angle can be read from the scale on this level. In this case, however, the

one-tenth graduation would give only a positive reading for a twelve-in. throw, so this level has been encased within a sleeve, which can be rotated to bring into position the correct scale for six throws, namely: 10 in., 11 in., 12 in., 13 in., 14 in., or 15 in. The markings on each scale indicate 0.001 in. error from right angles for each space between the bubble centre and the scale centre mark. To assist in finding the bubble centre, cross wires are set at each end on sliding thimbles.

A vernier scale has been incorporated to locate the sliding centre on the frame, at the correct length for a six-in. pin with a fifteen-in. throw. At these dimensions, the gauge provides a direct check on length of throw and by measuring pins after quartering at these dimensions, a complete check on the accuracy of the quartering machines can be made.



Crank-pin quartering gauge

Control Office at Metz, French National Railways

An important installation designed to improve the handling of heavy mineral traffic



Apparatus room showing equipment racks

THE French National Railways have brought into service at Metz, in the Eastern Region, a new traffic control office to serve a densely-populated industrial area. The rich Lorraine iron ore area provides an intense traffic in empty and loaded trains along the Moselle coal basin, towards the north of France, Belgium, Luxembourg, the Saar, the Ruhr, and Strasbourg. Traffic in imported coal and coke for the metallurgical industry also is considerable. Altogether, rail traffic emanating from this, the 7th District of the Eastern Region, accounts for about 20 per cent. of all the traffic of the French National Railways, and it became necessary to provide facilities for the District better to cope with it, particularly as the Metz area was hit badly by the war.

The new installation was put in as a high priority measure, and the latest technical progress in telephone equipment was incorporated in it; the rapid reconstruction of the open line circuits destroyed during the war had also to be undertaken. It was necessary to instal some 700 km. (438 miles) of new circuits.

The control office is laid out in such a manner that the staff can work under the best possible conditions. The building is sound insulated by means of a patented mixture of spun glass and wood fibre and felt, and is provided with double windows. The floor and the corridor floor are covered with a thick rubber carpet. Tem-



One of the six separate controllers' rooms

perature is automatically regulated and the air conditioned by special heating and renewing plant. Lighting in the main rooms is by fluorescent tubes, and in the subsidiary rooms by ordinary incandescent lamps.

There are six traffic controllers, each stationed in a separate room, at a desk with a slightly inclined top, above which is a 24-hr. graph with, below it, an electric clock marked in secs., and driven by a small a.c. motor. There is a telephone handset on each side, with telephone switch panels, where the top drawers of the desk normally would be, for communicating with other stations and controlling the working of the loudspeaker, and so on. The other officials in the office have telephone switchboards made in duralumin.

The connecting, selecting, and switching equipment is grouped together on metal relay racks in sets under the supervision of the chief maintenance officer. This facilitates supervision, upkeep and repair work, and allows it to be carried out without interfering with the work of the traffic controllers. Every 30 sec. an impulse from the station clock at Metz Central synchronises the seven receiving clocks in the control office.

There are three distinct special telephone networks radiating from the control office, the first comprising 212 telephones installed at 119 stations and linked with the office. There is also a traffic working network, which allows 13 stations to exchange messages with the office, and

another associated with the locomotive running department and connected to 11 running sheds. The mileage of circuits connected with the new control office amounts to 1,321 km. (835 miles), of which 689 km. (430 miles) are new.

RAILWAY REORGANISATION IN MEXICO.—The National Railways of Mexico are to be reorganised in an effort to eliminate present operating losses and put them on an efficient though non-profit-making basis, according to a recent Reuter report. Inflated payrolls absorb 84 per cent. of gross takings. Losses for this year alone are expected to amount to over 132,000,000 pesos, and the floating debt is estimated at 332,000,000 pesos. In addition to high operation costs, the National Railways are short of equipment. Of the 1,100 locomotives, it is stated that 222 are waiting to be repaired in inadequate shops, and another 195 should be removed from service because of their poor

condition. The reserve of sleepers is only 118,000 against the normal 1,300,000. Speed, therefore, must be reduced on some 535 km. of track because of danger from worn-out sleepers. Lack of good rails makes it necessary to run at reduced speed over an additional 733 km. The President has asked Congress to approve a new Statute for the National Railways, creating a new Railway Commission to be formed of representatives of the Government, the workers, and private business men. It will have power to investigate the whole system and insist on reforms deemed necessary to restore the system to efficiency. The President also has ordered the Treasury to stop collecting the

10 per cent. tax on the gross income of the National Lines, amounting to about 45,000,000 pesos a year, and to cover the system's losses for this year. He asked the Treasury to try to obtain the necessary credits to modernise and expand the whole system.

HARWICH-ANTWERP SAILINGS.—During the period February 14 to April 9, inclusive, British Railways steamer sailings between Harwich and Antwerp will be amended as follows: To Antwerp, on Mondays and Thursdays; from Antwerp, on Wednesdays and Saturdays. The present timings, both for train and steamer connections, will be maintained.

RAILWAY NEWS SECTION

PERSONAL

Mr. G. B. F. Neele, General Manager of the Leopoldina Railway, recently arrived in Great Britain.

Sir Ellis Hunter (Chairman & Managing Director of Dorman, Long & Co. Ltd.) has been re-elected President of the British Iron & Steel Federation for the forthcoming year. Mr. G. H. Latham (Chairman of the Whitehead Iron & Steel Co. Ltd.) has been re-appointed to the office of Past-President, and Mr. N. H. Rollason (Managing Director of John Summers & Sons Ltd.) has been re-elected to the post of President-Elect.

We regret to record the death on January 21 of Mr. D. C. K. McCulloch who was Assistant Chief Commercial Manager, L.M.S.R., from March, 1942, until his retirement, on account of ill health, in August, 1943.

Sir Frederick Heaton (Chairman), Lord Hacking and Mr. R. M. Matheson have resigned their seats on the board of the Bristol Tramways & Carriage Co. Ltd. Mr. George Cardwell has been elected a Director, and appointed Chairman, of the company.

Mr. F. A. Shorter, Assistant District Engineer, York, North Eastern Region, British Railways, has been appointed Assistant to Civil Engineer (Structures). Mr. H. Ormiston, Head of the Permanent Way Drawing Office, has been promoted to succeed him as Assistant District Engineer.

Señor Orlando Maroglio, Chairman of the Argentine Central Bank, has resigned and has been succeeded by Señor Alfonso Gomez Morales, Under-Secretary for Trade. Señor Gomez Morales has been simultaneously appointed Financial Secretary, and Señor Rodolfo Antonio Ares has been appointed Economic Secretary; these two new appointments are in accordance with the proposed increase in the number of Ministries under the new Argentine Constitution.

WESTERN REGION APPOINTMENTS

The following appointments are announced in the Western Region, British Railways:—

Dr. C. T. Newnham, Assistant to the Chief Medical Officer, to be Assistant Medical Officer, Paddington.

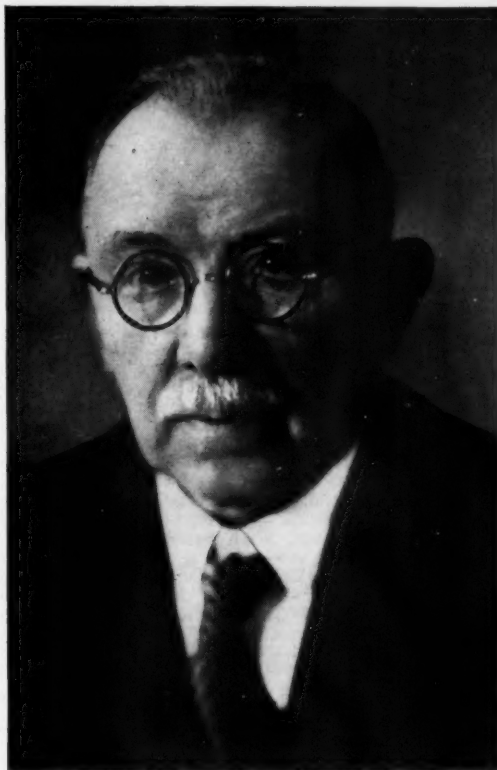
Mr. D. W. M. Wilson, Assistant to Road Motor Engineer, Slough, to be Assistant Road Motor Engineer, Slough.

Mr. H. G. Lakeman, Assistant Divisional Engineer, Newport, to be Divisional Engineer, Cardiff.

Mr. F. L. Lambert, Assistant Divisional Engineer, Neath, to be Assistant Divisional Engineer, Newport.

Mr. G. A. Jennings, Assistant, Divisional Engineer's Office, Newport, to be Assistant Divisional Engineer, Neath.

We regret to record the death on January 21, at the age of 74, of the Rt. Hon. J. H. Thomas, who was for many years General Secretary of the National Union of Railwaymen; was Member of Parliament for Derby from 1910 to 1936, and held office in the Labour Governments of 1924 and 1929 and the National Governments of 1931 and 1935. He was born at Newport, Monmouthshire, on October 3, 1874, and began his



Elliot

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The late Mr. J. H. Thomas

General Secretary of the National Union of Railwaymen, 1918-24 and 1925-31; Member of Parliament for Derby, 1910-36; and former Cabinet Minister

working life at the age of nine. He later joined the Great Western Railway as an engine cleaner, and in due course became a fireman and then a driver, transferring to Swindon during that period. He took an active part in trade union affairs, and was prominent in the Labour movement at Swindon, becoming a town councillor. He subsequently went to Manchester as organiser for the then Amalgamated Society of Railway Servants. In 1910 Mr. Thomas was elected Labour M.P. for Derby, and in 1918 became General Secretary of the N.U.R. When, in 1924, the first Labour Government was formed, he was made Secretary of State for the Colonies, and withdrew from the General Secretaryship of the N.U.R., taking up again the duties of that post in the next year. In 1929 the second Labour Government was constituted, and he became Lord Privy Seal & Minister of Employment. In August of that year he went to Canada to discuss matters with Mr. Mackenzie King and his Ministers and to seek Canadian

orders. In 1930 Mr. Thomas was appointed Secretary of State for the Dominions. When the Labour Government fell in 1931 he entered the National Government. The Derby Labour Party repudiated him, but he retained the seat nevertheless. He resigned the General Secretaryship of the National Union of Railwaymen, and forfeited his pension. In the National Government he was Secretary of State for the Dominions, and in the General Election of 1935 he was again returned, and transferred to the Colonial Office. He resigned his office and his seat in the House in 1936. The cremation took place at Golders Green on January 25, and the ashes were buried on January 26 at Swindon. A memorial service will be held at St. Martin-in-the-Fields at noon on February 1.

Mr. C. B. Clapham has been appointed Assistant Secretary at the Headquarters of the Road Transport Executive.

Mr. W. J. M. Lawford has been appointed Acting Secretary of the National Road Transport Federation in succession to Mr. F. D. Fitz-Gerald, who, due to pressure of his duties as Secretary of the Traders' Road Transport Association, recently asked to be relieved of the duties of Acting Secretary to the N.R.T.F.

The Road Transport Executive announces that, as a result of certain re-arrangements, the working party dealing with the North Eastern Area passenger road transport scheme has been re-constituted as follows:—Mr. G. Cardwell (Chairman) and Mr. A. Henderson, full-time Members of the Executive, and Mr. W. Beckett, part-time Member of the Executive.

We regret to record the death on January 22, at the age of 50, of Lord Melchett, Deputy-Chairman, Imperial Chemical Industries, 1940-47.

The Docks & Inland Waterways Executive has made the following appointments:—Mr. S. M. Sewell (Assistant District Goods & Dock Manager, Railway Executive, North Eastern Region, West Hartlepool) to be Docks Manager, King's Lynn; Mr. R. Buttery (Chief Inspector, Docks & Traffic, Railway Executive, London Midland Region, Goole) to be Docks Superintendent, Goole.

The following announcement has been issued by the United Kingdom Section of the Anglo-American Council on Productivity:—In order that the British Employers' Confederation may play its full part in the work of the council the United Kingdom side, which consists of representatives of the F.B.I., the B.E.C. and the T.U.C., has appointed Mr. Kenneth J. Burton, of the B.E.C., to be a Joint Secretary of the Council in addition to Sir Norman Kipping (F.B.I.) and Mr. Vincent Tewson (T.U.C.).

**Mr. B. X. Jessop**

Appointed Assistant Chief Regional Officer,
North Eastern Region, British Railways

Mr. B. X. Jessop, who, as recorded in our December 24 issue, has been appointed Assistant Chief Regional Officer, North Eastern Region, British Railways, has hitherto been Assistant Goods Manager, North Eastern Region. He is a son of the late Professor C. M. Jessop, for many years Professor of Mathematics at Durham University. Mr. B. X. Jessop was educated at St. Bees and at Clare College, Cambridge, and joined the L.N.E.R. as a traffic apprentice in 1927. After serving in the Traffic and Goods Departments, he was appointed in 1933 Assistant to the District Goods Manager, Leeds, with special responsibility for cartage. In 1935 he became Chief Clerk, and later Assistant, to the District Passenger Manager, Newcastle. In 1937 he was appointed Assistant District Goods Manager, and, in 1939, District Passenger Manager, at Leeds. As a member of the Supplementary Reserve he was called up at the outbreak of war, and held appointments in

**Mr. J. S. Nicholl**

Appointed Chief Officer (Organisation &
Development), Road Transport Executive

the Movements Directorate in France, England, Northern Ireland and India. He officiated, before his demobilisation, as Director of Movements, India Command, with the acting rank of Brigadier. During his absence with the Forces he was appointed District Superintendent, Sunderland, but, on demobilisation, took up the post of Assistant Passenger Manager, North Eastern Area, L.N.E.R., in October, 1945, and, a year later, that of Assistant Goods Manager, North Eastern Area.

Mr. J. S. Nicholl, C.B.E., who, as recorded in our December 10 issue, has been appointed Chief Officer (Organisation & Development), Road Transport Executive, has hitherto been Vice-Chairman & Chief Executive Officer of McNamara & Co. Ltd. He was educated at Sutton Valence, and became associated with the transport industry in 1904, when he joined the office staff of the Union Castle Line. Subsequently, in western

**Mr. S. S. Wheeler**

Appointed Commercial Advertisement Officer,
British Transport Commission

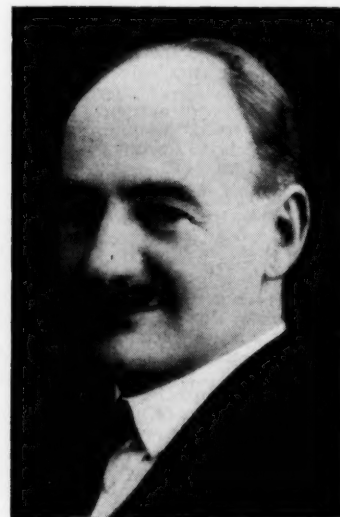
Canada, he served for a short period as Office Manager to the Chief Engineer of the Hudson Bay & Pacific Railway, and afterwards qualified as a chartered accountant and practised in Saskatchewan and Alberta. During the war of 1914-18 he served on the staff of the Auditor & Controller of the Imperial Munitions Board, Ottawa, and eventually was appointed Deputy Auditor & Controller. In 1920 he joined Sir Maxwell Hicks, then acting as Receiver & Manager of McNamara & Co. Ltd., and served as Chief Accountant until shortly after the reconstruction of the company in 1921, when he joined the firm of Maxwell Hicks & Company, Chartered Accountants, the firm managing McNamara & Co. Ltd., and was appointed Chief Executive Officer of the company. He became a member of the Transport Advisory Council at its inception in 1934, and in 1938 he was a member of the McIntock Committee appointed to inquire into transport in

**Mr. R. Morton Mitchell**

Appointed Chief Executive Officer & Secretary,
Road Haulage Association

**The late Mr. W. J. Scott**

Recently appointed Divisional Engineer, Bristol,
Western Region, British Railways, who, because
of illness, had not taken over in that post

**The late Mr. F. C. Bishop**

Southern Divisional Superintendent,
Southern Railway, 1943-47

Northern Ireland. Mr. Nicholl played an important part in the wartime organisation of the road haulage industry, both on the Ministry of War Transport operational committees and on the Producer Gas & Alternative Fuels Committee of the Ministry of Fuel & Power. He is the author of a number of papers on matters of road-transport interest, and was awarded the Institute of Transport (Road Transport) Gold Medal for the 1934-35 session; he was President of the Institute of Transport for 1941-43. Mr. Nicholl has been a member of the Road & Rail Central Conference from its inception (and Chairman of its Classification Committee), and is a member of the National Civil Aviation Consultative Council.

Mr. S. S. Wheeler, Commercial Advertising Officer of London Transport, has been appointed Commercial Advertisement Officer, Department of the Chief Public Relations & Publicity Officer, British Transport Commission. Mr. Wheeler will be responsible for the sales and allocation of all commercial advertising on the properties and rolling stock of the Railway, London Transport, Road Transport, Hotels, and Docks & Inland Waterways Executives. The existing commercial advertising organisations of the Executives will continue until the new organisation has been completed. Mr. Wheeler, who is 41 years of age, qualified as a solicitor in 1929, and joined the *Daily Express* Legal Department in 1933. In the same year he was appointed Advertisement Manager of the *Daily Express* Northern Edition. He saw war service with the R.A.F., which he joined in 1939; in 1943 he was appointed Deputy-Director of Administrative Plans at the Air Ministry; and he was demobilised in 1945 with the rank of Group-Captain. Returning to the Express Newspaper Group on demobilisation, he was appointed Assistant Advertisement Manager of the *Evening Standard*. He joined the London Passenger Transport Board as Commercial Advertising Officer in August, 1946.

Mr. Robert Morton Mitchell, B.L., who, as recorded in our January 21 issue, has been appointed Chief Executive Officer & Secretary of the Road Haulage Association, was born in Edinburgh, and was educated at the Royal High School and Edinburgh University, where he took a Bachelor of Law degree. He also holds the Diploma in Public Administration of London University. He has had a varied experience of administration and organisation, especially in local government and in industry. He is a qualified Scottish solicitor, and served in local government from 1931 to 1945; he was for four years Town Clerk of Johnstone, Renfrewshire. From 1945 to 1947 he was General Secretary of the Iron & Steel Trades Employers Association, dealing with labour relations in the heavy steel trade. In that capacity he took an active part in negotiations with trade unions and arbitrations before national tribunals. He also took part in the discussions which resulted in the conclusion of an agreement introducing a continuous seven-day working week in steel works in 1947. Mr. Morton Mitchell has been interested in the work of the International Labour Office, and in 1946 attended the first meeting of the Iron & Steel International Industry Committee in the U.S.A. For the past year he has been Secretary of the Relay Services Association of Great Britain, and has been responsible for re-organising and expand-

ing the activities of that association, the membership of which consists of radio-relay companies.

We regret to record the death, at the age of 45, of Mr. W. J. Scott, O.B.E., A.M.I.C.E., who was recently appointed Divisional Engineer, Bristol, Western Region, British Railways, but had been unable, on account of illness, to take over the duties of that post. Mr. H. A. Alexander, who had intended to retire several months ago as Divisional Engineer, Bristol, is carrying on in that position for the time being. Mr. Scott was educated at the Nautical College, Pangbourne, and served at sea for four years. He served an apprenticeship under Mr. J. C. Lloyd, then Chief Engineer, Great Western Railway, from January, 1926, to December, 1928, and subsequently became a Junior Assistant in the Wolverhampton Engineering Division of that railway. In 1932 he was appointed Senior Surveyor & Draughtsman in the Bristol Division, and in July, 1939, Assistant Divisional Engineer, Gloucester, which position he held until the outbreak of war. He went to France as second-in-command of 152 Railway Construction Company, R.E., with the rank of Captain, and was promoted Major in May, 1940, and commanded the company until June, 1942. He then served as Deputy Railway Construction Engineer, Southern Command, until June, 1943, and thereafter in a similar capacity in the Western Command. In October, 1943, he was promoted Lt.-Colonel and placed in command of No. 6 Railway Construction & Maintenance Group; he served in North West Europe, and was made an O.B.E. Mr. Scott returned to the G.W.R. in October, 1945, with the appointment of Assistant Divisional Engineer, Neath, and became Divisional Engineer, Cardiff, in 1947.

We regret to record the death on January 17 of Mr. F. C. Bishop, M.Inst.T., who retired in July, 1947, from the position of Southern Divisional Superintendent, Southern Railway. Mr. Bishop joined the London Chatham & Dover Railway as a learner clerk in 1897, and, after the working union of that line with the South Eastern Railway, was appointed a junior clerk at Birchington. He then had experience in all branches of railway work in the country and London areas, and in 1903 was transferred to headquarters, under the Superintendent of the Line, at London Bridge. He served in all sections of that office until 1914, when, on the outbreak of war, he was appointed to the special staff dealing with naval and military movements. After demobilisation he took part in the re-organisation of the timetables, and afterwards had charge of the Main-Line Section of the Timetable and Train Running Departments. Mr. Bishop was appointed Chief Clerk to the Eastern Divisional Superintendent (Dover), Southern Railway, in 1924. He was appointed Assistant Southern Divisional Superintendent, at Southampton, in 1930, and in 1933 was transferred to London as Senior Assistant Superintendent, London Central Division. In October, 1943, he returned to Southampton as Divisional Superintendent.

Sir Thomas Frazer has intimated his desire to retire from his position as General Manager of the North British & Mercantile Insurance Company and its associated companies, which include the Railway Passengers' Assurance Company, as from May 31, and the directors have

accepted his resignation with regret. Mr. E. Lansdowne (now Assistant General Manager) has been appointed General Manager of the company and its associated companies, from June 1.

Mr. H. N. Trye, O.B.E., until his recent retirement, after 51 years' service, the longest-serving officer of the London Transport Executive and its predecessors, was recently presented with a cheque at an informal gathering at London Transport headquarters. The presentation was made by Mr. L. C. Hawkins, a Member of the Executive. Mr. Trye joined the London Road Car Company (later amalgamated with the London General Omnibus Company) in 1897. In 1921 he was appointed Traffic Auditor to all the railway and bus companies in the Underground group, and he held a similar appointment with the L.P.T.B. Among others at the gathering was Mr. John Christopher Mitchell, one-time Secretary of the Underground companies.

PERMANENT WAY INSTITUTION LONDON SECTION

At a recent meeting of the London Section of the Permanent Way Institution, officers and committee for the section were elected as follow, and council members as below were nominated for the year commencing January 29:—

Chairman: Mr. A. Dean; Vice-Chairman: Mr. F. Lloyd; Corresponding Secretary: Mr. J. A. R. Turner; Honorary Assistant Secretary: Mr. K. A. C. Parker.

Council Members: Messrs. D. R. Bennett, F. Lloyd, J. A. Carey, A. Dean, J. N. Peck, J. Tredget, J. A. R. Turner.

Section Committee: Messrs. H. Hewitt, J. R. Hammond, G. W. Baker, D. R. Bennett, J. A. Carey, C. E. Dunton, B. P. Fletcher, F. Lloyd, R. J. McLeod, J. N. Peck, R. H. Ray, D. F. Soundy, J. Tredget.

Mr. C. L. Kumar, General Manager of the Jodhpur Railway, has retired, and Mr. M. Anand Rao, Chief Engineer, has succeeded him.

LONDON MIDLAND REGION STAFF CHANGES

Mr. T. E. Bell, Assistant Divisional Controller (Freight Services), Office of Divisional Operating Superintendent, Crewe, to be Divisional Controller (Freight Services), Office of Divisional Operating Superintendent, Crewe.

Mr. T. R. Chapelhow, Assistant to District Traffic Superintendent (Traffic Operating), Chester, to be Assistant Divisional Controller (Freight Services), Office of Divisional Operating Superintendent, Crewe.

Mr. A. S. Turner, Head Office Inspector (Telegraph & Telephones), Operating Superintendent's Office, Euston, to be Assistant to District Traffic Superintendent (Traffic Operating), Chester.

Mr. H. W. T. Young, Assistant to District Operating Superintendent, Leeds, to be Assistant District Operating Superintendent, Crewe.

Mr. T. W. Royle, Assistant to District Operating Superintendent, Rotherham, to be Assistant to District Operating Superintendent, Leeds.

Mr. A. E. S. Bayley, Passenger Assistant to District Traffic Superintendent, Chester, to be Assistant District Traffic Superintendent (Traffic Operating), Chester.

Mr. T. Finch, Stationmaster, Birmingham (New Street), to be Stationmaster, Crewe.

Mr. W. H. Price, Stationmaster, Blackburn, to be Stationmaster, Birmingham (New Street).

British Transport Commission Statistics

Summary of the principal statistics for the four-week period ended November 28

The British Transport Commission has succeeded in bringing its *Transport Statistics* practically up to date. We summarise Number 12 for the four-week period ended November 28, in this article and hope to have in February complete figures for 1948. A word of praise is due to the statistical assistants of the Commission and the Executives for clearing off arrears and circulating aggregates for the first 48 weeks of last year.

The staff statement shows a reduction of 3,827 employees in November. At September 5, the number of staff was 808,389; it has decreased since by 7,235. The principal economies have been made in the operating staff of British Railways. Some of these savings may be seasonal, but we understand that vigorous efforts are being made to put the railway establishment on

something approximating to its pre-war basis, after allowing for the effects of present-day conditions.

Table 1, giving the November traffic receipts, does not call for comment, as an article in our January 14 issue dealt with

traffic receipts for the 52 weeks ended December 26, 1948. Particulars of passenger journeys originating for the November period are not ready, but Table 2 (B) shows that the recent trend of freight tonnage was unchanged; the tonnage of merchandise decreased by 1.45 per cent., though mineral and coal tonnages increased by nearly 11 per cent. and 6 per cent. respectively.

A comparison of tonnage originating with the net ton miles given in Table 2 (C)

STAFF

	Commission's Head office	British Railways	London Transport	Hotels & Catering	Steamships Marine & Docks	Inland Waterways	Railway Clearing House	Total
Administrative ...	134	79,710	4,921	1,883	2,168	720	611	90,147
Operating ...	—	345,384	61,044	—	15,015	1,745	—	423,188
Maintenance & construction ...	—	213,229	31,030	—	7,264	2,871	—	254,394
Others ...	13	14,597	3,926	14,459	158	20	252	33,425
Total ...	147	652,920	100,921	16,342	24,605	5,356	863	801,154

I. BRITISH TRANSPORT COMMISSION TRAFFIC RECEIPTS

	Four weeks to November 28		Inc. or dec.	Aggregate to November 28		Inc. or dec.
	1948	1947		1948	1947	
	£000	£000	£000	£000	£000	£000
British Railways—						
Passengers ...	6,865	7,200	— 335	113,682	107,065	+ 6,617
Parcels, etc., by passenger train ...	2,266	2,239	+ 27	26,968	24,274	+ 2,694
Merchandise ...	6,875	7,436	— 561	77,173	69,208	+ 7,965
Minerals ...	2,503	2,312	+ 191	26,848	20,278	+ 6,570
Coal & coke ...	5,610	5,555	+ 55	61,799	51,966	+ 9,833
Livestock ...	182	145	+ 37	1,197	1,037	+ 160
	24,301	24,887	— 586	307,667	273,828	+ 33,839
Steamships ...	555	446	+ 109	9,046	8,122	+ 924
Inland Waterways ...	145	137	+ 8	1,585	1,427	+ 158
Hotels & Catering ...	995	963	+ 32	12,321	11,504	+ 817
London Transport—						
Railways ...	1,148	1,086	+ 62	13,444	12,240	+ 204
Buses & coaches ...	2,354	2,233	+ 121	29,233	26,539	+ 2,694
Trams & trolleybuses ...	849	834	+ 15	10,387	9,675	+ 712
	4,351	4,153	+ 198	53,064	48,454	+ 4,610
Total ...	30,347	30,586	— 239	383,683	343,335	+ 40,348

indicates that the average haul of merchandise and minerals was longer, whereas coal and coke passed over shorter distances on the whole. A freight train speed of 7.67 m.p.h. (Table 2 (E)), was lower than in any period since nationalisation, except January, 1948. The tonnage of locomotive coal used was the largest for any period last year and the consumption per engine mile reached the excessive figure of 64.88 lb. The rolling stock position has been improved by reducing the number of locomotives, coaching vehicles and wagons under repair, but 18 per cent. of the stock of locomotives and 10 per cent. of the wagon stock were unserviceable on November 28.

Table 3 records an increase in both the tonnage and ton-miles worked by Inland Waterways. Liquids in bulk were conveyed for an average distance of 22 miles, half as far again as in 1947.

Table 4 shows that London Transport originated 5 per cent. more passenger journeys. November carryings were, however, 1.8 per cent. below October. This decrease was in road traffic; railway journeys were 1.5 per cent. above October.

2. BRITISH RAILWAYS

(A) Passenger Journeys Originating in the Month of October

	Region						Total
	London Midland	Western	Southern	Eastern	North Eastern	Scottish	
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Ordinary fares ...	1,424,000 (—9.53)	660,000 (—7.06)	1,862,000 (—7.06)	847,000 (—1.85)	170,000 (—7.64)	300,000 (—10.07)	5,263,000 (—7.15)
Monthly return ...	5,932,000 (—13.86)	1,627,000 (—27.98)	6,851,000 (—11.08)	1,819,000 (—13.86)	450,000 (—38.36)	907,000 (—20.13)	17,586,000 (—15.57)
Excursion, weekend, cheap day, etc. ...	2,596,000 (+271.87)	1,632,000 (+196.90)	2,955,000 (+252.28)	778,000 (+264.06)	689,000 (+324.18)	694,000 (+480.20)	9,344,000 (+261.85)
Workmen ...	7,399,000 (—4.50)	1,801,000 (—8.63)	6,425,000 (—0.15)	1,929,000 (—9.11)	943,000 (—9.89)	981,000 (+0.14)	19,478,000 (—4.06)
Other descriptions ...	1,305,000 (—13.76)	855,000 (—19.49)	1,384,000 (—17.40)	633,000 (—17.97)	296,000 (—28.78)	347,000 (—25.16)	4,820,000 (—18.32)
Season tickets ...	5,830,000 (—0.95)	1,953,000 (—20.70)	10,409,000 (+23.77)	2,131,000 (—4.90)	685,000 (—10.60)	1,790,000 (+0.72)	22,798,000 (+5.83)
Total ...	24,486,000 (+0.74)	8,528,000 (—5.40)	29,886,000 (+10.42)	8,137,000 (—2.23)	3,233,000 (—2.18)	5,019,000 (+4.37)	79,289,000 (+3.21)

(B) Freight Tonnage Originating

	Region						Total
	London Midland	Western	Southern	Eastern	North Eastern	Scottish	
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Merchandise ...	1,323,000 (+0.55)	812,000 (—2.16)	298,000 (—5.79)	618,000 (—2.49)	582,000 (+1.84)	684,000 (—4.11)	4,317,000 (—1.45)
Minerals ...	1,599,000 (—0.16)	734,000 (+19.20)	142,000 (+1.43)	874,000 (+10.61)	893,000 (+18.13)	702,000 (+26.97)	4,944,000 (+10.94)
Coal & coke ...	4,836,000 (+10.89)	2,003,000 (+0.88)	306,000 (+4.53)	2,148,000 (+10.09)	2,484,000 (+8.82)	1,656,000 (—6.68)	13,433,000 (+6.21)
Livestock ...	25,000 (—2.67)	24,000 (+15.67)	8,000 (—8.57)	9,000 (—4.30)	14,000 (+7.03)	35,000 (+1.62)	115,000 (+3.80)
Total ...	7,783,000 (+6.56)	3,573,000 (+3.50)	754,000 (—0.32)	3,649,000 (+7.81)	3,973,000 (+9.66)	3,077,000 (+0.06)	22,809,000 (+5.62)

(C) Net Ton Miles

	Region						Total
	London Midland	Western	Southern	Eastern	North Eastern	Scottish	
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Merchandise & livestock ...	197,370,000 (+4.98)	103,579,000 (-6.79)	27,692,000 (-1.39)	88,198,000 (+4.37)	52,631,000 (-1.11)	91,815,000 (-1.42)	561,285,000 (+0.57)
Minerals ...	136,801,000 (+7.27)	77,237,000 (+15.47)	15,886,000 (-7.46)	100,367,000 (+12.77)	35,297,000 (+28.72)	43,343,000 (+15.12)	408,931,000 (+11.83)
Coal & coke ...	302,520,000 (+5.02)	130,632,000 (-7.32)	26,906,000 (-8.65)	180,021,000 (+11.77)	67,427,000 (+8.73)	65,030,000 (-8.04)	772,536,000 (+2.70)
Total, all classes of traffic ...	636,691,000 (+5.48)	311,448,000 (-2.35)	70,484,000 (-5.65)	368,580,000 (+10.17)	155,355,000 (+8.90)	200,188,000 (-0.65)	1,742,752,000 (+3.98)

(D) Train Miles

	Region						Total
	London Midland	Western	Southern	Eastern	North Eastern	Scottish	
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Coaching train miles—							
Steam—							
Loaded ...	4,159,000 (+6.60)	2,861,000 (+8.99)	1,458,000 (+10.77)	2,501,000 (+8.34)	979,000 (+3.96)	1,724,000 (+1.74)	13,682,000 (+6.99)
Empty ...	102,000 (+6.28)	123,000 (+2.94)	42,000 (+11.86)	84,000 (+1.75)	40,000 (+13.24)	52,000 (-10.76)	443,000 (+3.23)
Total loaded & empty ...	4,261,000 (+6.59)	2,984,000 (+8.73)	1,500,000 (+10.80)	2,585,000 (+8.11)	1,019,000 (+4.30)	1,776,000 (+1.33)	14,125,000 (+6.87)
Electric—							
Loaded ...	423,000 (+9.19)	—	2,933,000 (+13.37)	19,000 (-65.11)	93,000 (+7.03)	—	3,468,000 (+11.31)
Empty ...	21,000 (-7.83)	—	62,000 (+12.21)	2,000 (-16.25)	10,000 (-4.20)	—	95,000 (+4.54)
Total loaded & empty ...	444,000 (+8.23)	—	2,995,000 (+13.35)	21,000 (-63.16)	103,000 (+5.80)	—	3,563,000 (+11.12)
Freight train miles—							
Loaded ...	3,088,000 (+1.14)	1,671,000 (+2.40)	547,000 (-4.57)	1,770,000 (-6.42)	945,000 (+5.60)	1,440,000 (-3.41)	9,461,000 (+1.65)
Empty ...	545,000 —	197,000 (-8.94)	12,000 (-4.67)	349,000 (-1.15)	204,000 (+7.65)	200,000 (+0.03)	1,507,000 (-0.62)
Total loaded & empty ...	3,633,000 (+0.96)	1,868,000 (+1.07)	559,000 (-4.58)	2,119,000 (+5.10)	1,149,000 (+5.96)	1,640,000 (-3.01)	10,968,000 (+1.33)
Total coaching and freight train miles—							
Loaded ...	7,670,000 (+4.49)	4,532,000 (+6.43)	4,938,000 (-10.29)	4,290,000 (+6.58)	2,017,000 (-4.88)	3,164,000 (-0.69)	26,611,000 (-5.54)
Empty ...	668,000 (+7.54)	320,000 (-4.47)	116,000 (-10.47)	435,000 (-0.68)	254,000 (-7.69)	252,000 (-2.35)	2,045,000 (-0.49)
Total loaded & empty ...	8,338,000 (+4.15)	4,852,000 (+5.65)	5,054,000 (+10.31)	4,725,000 (+5.85)	2,271,000 (+5.20)	3,416,000 (-0.80)	28,656,000 (+5.17)

(E) Freight Train Miles per Train Hour

Region												Total	
London Midland		Western		Southern		Eastern		North Eastern		Scottish			
1948 6.40	1947 6.20	1948 8.87	1947 7.81	1948 8.61	1947 8.46	1948 7.56	1947 7.12	1948 9.12	1947 8.79	1948 9.08	1947 9.09	1948 7.67	1947 7.32

(F) Locomotive Coal Consumption

	Region						Total
	London Midland	Western	Southern	Eastern	North Eastern	Scottish	
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Tonnage consumed ...	367,000 (-1.21)	178,000 (+8.42)	78,000 (+7.88)	214,000 (+0.02)	95,000 (+0.50)	178,000 (-0.61)	1,110,000 (+1.32)
Lb. per engine mile ...	67.32 (-3.12)	54.34 (+3.37)	56.48 (+4.34)	68.02 (-4.32)	64.30 (-2.90)	74.94 (+0.28)	64.88 (-1.42)

(G) Rolling Stock Position

	Operating stock	Number under repair	Serviceable stock	Serviceable stock in 1947
Locomotives ...	19,693	3,680	16,013	16,086
Coaching vehicles ...	55,459	6,024	49,435	48,227
Freight wagons ...	1,176,940	122,972	1,053,968	1,041,238

3. INLAND WATERWAYS

Tonnage of traffic and ton-miles

	Tonnage	Per cent.	Ton-miles	Per cent.
General merchandise ...	318,000	(+2.24)	5,342,000	(-5.04)
Liquids in bulk ...	131,000	(-0.46)	2,911,000	(+40.60)
Coal, coke, patent fuel & peat ...	440,000	(+0.47)	6,120,000	(-2.84)
Total ...	889,000	(+0.96)	14,373,000	(+2.70)

4. LONDON TRANSPORT

(A) Passenger Journeys Originating

	Number	Per cent.
Railways ...	51,970,000	(+4.18)
Buses & coaches ...	210,058,000	(+6.47)
Trams & trolleybuses ...	92,193,000	(+2.69)
Total ...	354,221,000	(+5.13)

(B) Rail and Road Car Miles

	Miles	Per cent.
Railways ...	17,859,000	(+9.38)
Buses & coaches ...	23,992,000	(+3.58)
Trams & trolleybuses ...	8,677,000	(+0.88)
Total ...	50,528,000	(+5.06)

British Electric Traction Industry in 1948

Important home and overseas orders for electric and diesel-electric rolling stock and substation equipment

During 1948 much important work was undertaken by British firms in connection with electrification schemes in this country and overseas. Work has proceeded with the contract placed with the English Electric Co. Ltd., some time ago, for the electrification of 67 km. of main line on the Estrada de Ferro Santos a Jundiá of Brazil, between Jundiá and Moocha. This contract includes fifteen 3,000-h.p. electric locomotives, mercury arc rectifier substations with supervisory control, switchgear, transformers, overhead equipment, etc., and the locomotives are the largest units of this type to be built in Great Britain so far.

Work is in hand, also, on a large order for India for 32 sets of electric motor coach equipment and 32 sets of trailer coach equipment, this order being placed with the English Electric Company by the Great Indian Peninsula Railway. An order has been placed by the New South Wales Government Railways for two 44 MVA. and two 55 MVA. transformers for service on their 132-kV. system. These transformers are three-phase units and represent the largest of this type ordered for Australia. Most of the large number of mercury arc rectifiers ordered during the year were for export. A repeat order from the New Zealand Government Railways was for four 1,600-V. pumpless steel tank equipments, and the New South Wales Government Railways placed an order for a 1,500 kW. 1,500-V. pumpless equipment.

SOUTH AFRICAN CONTRACTS

Several large contracts for 3,000-V. electrification in South Africa and Brazil were secured by the Metropolitan-Vickers Electrical Co. Ltd. in the past twelve months. For the Reef Section of the South African Railways, the last of 28 six-axle mixed-traffic locomotives has been delivered, and many of these locomotives now have completed 100,000 miles in service.

All the electrical equipment for 54 motor coach bodies has been delivered to the coach builders, and some of the new coaches are now in use on the railways. The order for 30 multiple-unit three-coach train sets for the Central Railway of Brazil has been completed, and these sets are now helping to relieve the traffic congestion on the suburban lines of Rio de Janeiro.

Equipment supplied by the Metropolitan-Vickers Electrical Co. Ltd. for two 800-h.p. diesel-electric freight locomotives for Coras Iompair Eireann is undergoing a combined test with the Sulzer diesel engines. A further order has been received from C.I.E. for six sets of electrical equipment for six-axle express passenger diesel locomotives, each having two 800-h.p. diesel generator units interchangeable with those on the freight locomotives.

DIESEL SHUNTERS FOR EGYPT

Last year the English Electric Co. Ltd. delivered 15 diesel-electric shunters of 350 h.p. each to the Egyptian State Railways, and 20 metre-gauge shunters of 350 h.p. have been shipped to Malaya. These locomotives are now in service in both countries. Other orders include ten 1,600-h.p. main-line diesel-electric locomotive equipments for the New South Wales Government Railways, ten 350-h.p. diesel-

electric shunters for Victoria, a second order from Tasmania for ten 600-h.p. units, and fifteen 600-h.p. diesel-electric locomotives for the New Zealand Government Railways. Delivery has begun also of the 1,600-h.p. main-line diesels for Egypt.

In addition to their export activities, the Metropolitan-Vickers Electrical Co. Ltd. and the English Electric Co. Ltd. have continued to supply electric and diesel-electric equipment to British Railways. Progress made in the design of the Metropolitan-Vickers gas turbine locomotive for the Western Region was described in our January 14 issue. In 1948, also, the first British main-line diesel-electric locomotive equipped with "English Electric" diesel engine, generator, traction motors, and electric control equipment, gave an impressive performance on the London Midland Region and covered 58,087 miles in eight months.

The third electric locomotive of the booster type has been completed by the English Electric Company for the Southern Region and is now undergoing tests. This locomotive has two motor generator sets with flywheels which permit a locomotive to maintain its tractive effort while passing over gaps in the conductor rail. This firm has also continued deliveries of multiple-unit electric coach equipments to the Eastern Region of British Railways for the Liverpool Street-Shenfield electrification.

R.S.A. Visits to Lots Road Generating Station

The Railway Students' Association completed its recent three visits to the London Transport Executive generating station at Lots Road, on January 19, when the party was under the leadership of Mr. J. E. Cutmore, Member of Committee, R.S.A. Members were conducted over the first part of the visit by Mr. C. Royce, Station Combustion Engineer, Lots Road, and first proceeded to the dock area where the greater part of the coal is unloaded. Each of the two transporter cranes here can handle up to 100 tons of coal an hour, and, after automatic weighing, the coal passes on an endless belt conveyor to the elevator house, before storage in 15,000-ton capacity bunkers over the boilers. Coal falls from the bunkers through a chute to the front of the boiler, where it is fed on to a revolving chain grate.

Feed water is pumped into the boilers by six electrically-driven and three steam-driven pumps, each capable of delivering 400,000 lb. of feed water an hour, against a pressure of 400 lb. per sq. in. Steam is produced by the boiler at 300 lb. per sq. in. and a temperature of 750° F., and up to 60,000 lb. of steam per hour can be supplied by each boiler.

Steam enters the turbine in a high-pressure cylinder and then exhausts into a low-pressure cylinder before exhausting into the condensers: the rotor speed is kept practically constant at 2,000 rev. per min. Each of the turbo-alternators has a maximum rating of 18,750 kW. and the total capacity of the station is 168,750 kW.

The operations carried out in the control room were explained to members by Messrs. G. Moody and R. Akhurst. From the control room the main switches are

operated and the alternators regulated to produce the required energy at the correct voltage. The control panels for the outgoing feeder cables are arranged in a semi-circle and marked with the substation names; an ammeter indicates the load on the feeder and a control handle operates the main switch, though protective relays and fuses automatically open the switch in the event of a fault occurring in the feeder cable.

Southend Train Services

Statement on proposed improvements after London meeting

At the headquarters of the Railway Executive on January 18, as was reported briefly on page 65 in our issue of January 21, Sir Eustace Missenden, Chairman, accompanied by Mr. V. M. Barrington-Ward, Member of the Railway Executive, met a deputation from the Southend Corporation composed of the Mayor, Town Clerk, and Councillors, and accompanied by the two local Members of Parliament, Mr. Henry Channon (Southend) and Captain R. J. Gunter (Essex, S.E.), and representatives of the Railway Travellers Association.

The deputation represented to the Railway Executive the continued difficulties experienced in connection with the operation and, particularly, the timekeeping of the residential services between the Southend district and Fenchurch Street, and pointed out the unfortunate effect which these difficulties were having on the economy of the community with their consequential effect on the employment of Southend residents in London.

Special emphasis was given to what were understood to be the causes of the inadequate services in the form of engine breakdown and operational incidents, which it was felt were capable of being overcome, and the deputation conveyed to the Executive the considerable public feeling now prevalent in the district, on what was believed to be the inadequacies of the service.

Sir Eustace Missenden referred sympathetically to the difficulties which had been represented to the Railway Executive, and assured the deputation that everything possible continued to be done to restore and improve the standard of day-to-day working with the resources at present at the disposal of British Railways, limited as they still were by conditions arising from the war. He referred also to a re-organisation now taking place in connection with the Fenchurch Street, Tilbury, and Southend lines, and mentioned that as a new administrative measure they would shortly be formed into a single operation district of their own.

Over and above the improvements which it was thus hoped to make, however, as a high priority urgent consideration was being given to the long-term development of the Fenchurch Street-Southend line, and a committee of experts was now sitting to deal with the problem.

The report of this Committee, which was expected in the near future, would cover the possibilities, first, of electrification, second, of the introduction of colour-light signals enabling trains to run at a much closer headway, and, third, some degree of increased track capacity by multiplying the present number of running lines. Any definite programme which might arise from this investigation would be subject to the over-riding considerations of the national economy.

Electrification and Diesel-Electrification in Holland

An analysis of some of the factors which have prompted the Dutch to electrify further main lines

In a paper read to an audience of Dutch engineers in 1948 and published in a recent issue of the Dutch journal *De Ingenieur*, Mr. H. J. van Lessen, a leading official of the Netherlands Railways, has given some interesting details of facts and official policy concerning the electrification and diesel-electrification of the Dutch main lines.

As is well known, the Dutch railways have followed, and are following, a policy of wholesale electrification which, in fact, was continued during the occupation so that the aggregate length of the electrified sections reached a total of over 350 miles in 1942-43. At that time, the length of single track equipped for overhead traction totalled 820 miles, fed from 36 substations.

Although the German occupation authorities had concurred in the continued electrification of the lines in the Amsterdam-Utrecht-Amersfoort triangle, they seized a quantity of copper which was indispensable for this purpose, so that the work had to be stopped. Then, just before the liberation, the Germans carried out a thorough destruction and removal of the electrical equipment. Of the 820 miles of overhead equipment, no more than 200 miles remained, and those were spread over isolated sections. Of the 36 substations 28 were entirely stripped of equipment, the remainder damaged.

After the liberation, the rehabilitation work was concentrated on the Amsterdam-Rotterdam main line which was of paramount importance. By "cannibalising" the remaining electrical equipment of other sections, the Dutch succeeded in resuming electrical operation on that line in August, 1945. From then on, and in the face of a continued shortage of skilled labour, suitable tools and necessary materials, the work of rehabilitation continued until, in 1948, electric traction was not only restored on all sections previously equipped for electric operation, but even extended to a new section, Amsterdam-Amersfoort. A labour force of, on an average, 200 men has been at work for 2½ years.

The electric rolling stock likewise has been thoroughly depleted by destruction or removal to Germany. Out of 748 electric coaches, with 48,463 seats, no more than 41 vehicles, with 3,310 seats, remained. Through the repair of coaches retrieved from Germany, it has now been possible to increase the stock to 449 vehicles, but that figure is still considerably short of requirements.

The position in regard to diesel-electric vehicles was even worse; out of 40 three-car units and 18 five-car units, no more than two units could be used. Even in 1948, the number of diesel-electric vehicles in service was not more than 71, compared with the pre-war figure of 210.

In a discussion on the economic background of the electrification policy followed by the Netherlands Railways, a detailed analysis was given of the operating costs of electric and diesel-electric traction, respectively, as experienced in 1939. The average total operating cost per 100 train-km. amounted to 46.65 fl. in the case of electric traction, and 72.68 fl. in the case of diesel-electric traction.

The figure for electric traction, 55 per cent. of which is in respect of current consumption, must be increased by an amount representing the maintenance cost

of the fixed electrical installations. This amount is practically independent of the traffic intensity and is stated to have been 2.84 fl. per km. per day. Interest on capital (4 per cent.) and amortisation totalled 20.63 fl. per 100 train-km. for electric traction and 31.90 fl. per 100 train-km. for diesel-electric traction. Interest on, and amortisation of, the fixed electrical installations amounted to 6.19 fl. per km. per day.

As the ratio of seating accommodation and train weight is practically equal with both types of traction (approximately 1.5 seats per tonne), the figures are comparable, but they must be brought up to date and adjusted for post-war prices and conditions. This the author has done, and he arrives at the following totals:—

	Electric Traction	Diesel-electric Traction
Per 100 train-km. :—		
Operating cost	75.60 fl.	110.35 fl.
Interest and amortisation	68.00 fl.	95.40 fl.
Total	143.60 fl.	205.75 fl.
Per km. of electrically equipped line :—		
Maintenance	5.50 fl.	—
Interest and amortisation	23.45 fl.	—
Total	28.95 fl.	—

On this basis, a simple calculation or graph shows that the total cost is about equal for each form of traction if the traffic intensity is about 37 trains a day.

Such an intensity would correspond to, say, 1 train per hr. in each direction for 19 hr. a day (ignoring goods trains). With a greater frequency, electric traction becomes, under Dutch conditions, progressively more economic than diesel-electric traction. The advantage becomes even more pronounced if electric traction is also used for goods trains.

Other considerations which have encouraged the Netherlands Railways to re-affirm their electrification policy, are the greater number of skilled personnel needed for the maintenance of diesel-electric stock, and the greater amount of foreign currency required for the importation of the fuel. The Dutch railway administration has decided therefore to electrify further main line sections. Work is proceeding in the provinces of Limburg and Brabant, where electric traction is scheduled to operate from May, 1949, and January, 1950, respectively.

The remainder of Mr. van Lessen's paper is concerned with the specifications for new electric locomotives and technical details regarding their performances. Whereas the initial electric rolling stock comprised multiple-unit trains only, it was decided in 1940 also to place orders for electric locomotives which would be able to haul goods as well as passenger trains. The first orders placed in Switzerland had to be cancelled because of the progress of the war. In October, 1945, new orders for 10 electric locomotives were placed with Swiss and Dutch manufacturers. The first of these locomotives (described in our issue of August 13, 1948), which are of the "1-Do-1" type, went into service in May, 1948.

Extension of the Train Telephone System on the Pennsylvania Railroad

The Pennsylvania Railroad telephone system for communication between trains, and between trains and signal boxes, which is already the largest in the world, is being extended to cover 350 more miles of line, between Baltimore, York, Harrisburg, Williamsport, and Elmira, and between Williamsport, Lock Haven, and Tyrone.

Locomotives on these lines already have been equipped with telephones. Ten wayside signal boxes are now being equipped for the service at a cost of about \$76,000. The equipment, which is built by Union Switch & Signal Company, will be in use by the early Spring.

The train telephone, by providing a constant and dependable means of communication between signal boxes and trains, among trains, and between the locomotive and brake van of the same train, quickens service by the better dispatching and higher operating efficiency which result from these contacts. The Baltimore-Harrisburg line is an important link in the Pennsylvania route between Washington and the west and north; the Harrisburg-Williamsport-Elmira line serves north-western Pennsylvania and New York State; and the Tyrone-Lock Haven-Williamsport line carries heavy freight traffic between the west and New England.

Including earlier installations on the four-track main line between Harrisburg and Pittsburgh, and on important freight lines in Ohio and New Jersey, the train telephone system, on completion of this project, will be in operation on 1,817 miles. A total of 407 passenger and freight locomotives, 130 brake vans, and 58 signal boxes will then be equipped.

The train telephone utilises high-frequency electric current on two channels, transmitted through the air and linking the various telephones on trains and in boxes by induction in the rails and existing wires on poles parallel with the tracks. Transmission paths are confined entirely to the railway property. Men in wayside signal boxes and crews on trains moving in their areas talk with each other, though many miles apart, handling instructions, reports and information pertaining to train operations. The crew of one train communicates with the crew of another miles distant, and the guard in the brake van and his enginemen talk to each other at will.

CLOSING OF STATIONS, LONDON MIDLAND REGION.—The following stations and halts on the London Midland Region were closed to passenger traffic on January 1:—Kelston (between Mangotsfield and Bath); Burlington Road Halt, and Gilets Crossing Halt (between Blackpool (Central) and St. Annes); Denaby Halt (on the Wakefield and Dearne Valley line); Hazelwood, Shottle, Idrigehay, and Wirksworth (on the branch from Duffield to Wirksworth); Horninglow, Stretton & Clay Mills, and Rolleston-on-Dove (between Burton-on-Trent and Tutbury). Most of the stations continue to deal with parcels and freight traffic, but Rolleston-on-Dove has been closed completely. Alternative bus services are available in all cases. The two halts between Blackpool and St. Annes, and the stations on the Wirksworth branch, had been closed temporarily to passengers since January 1, 1940, and June 16, 1947, respectively.

Notes and News

Docks & Inland Waterways Executive.—Applications are invited for the posts of Staff & Establishment Officer and assistant solicitor on the headquarters staff of the Docks & Inland Waterways Executive. See Official Notices on page 111.

Wharf Foreman Required.—Applications are invited from qualified candidates for the post of wharf foreman required by the Nigerian Government Railway for one tour of 18 to 24 months, with prospect of permanency. See Official Notices on page 111.

Senior Draughtsman (Engineering) Required.—Applications from qualified candidates are invited for the post of senior draughtsman (engineering) by the East African Railways & Harbours for two to four years, with prospect of permanency. See Official Notices on page 111.

Office Assistant Required.—Applications from qualified candidates are invited for the post of office assistant required by the East African Railways & Harbours for the Chief Mechanical Engineer's office, Tanganyika, for one tour of 24 to 48 months in the first instance. See Official Notices on page 111.

Southampton Engine-Naming Ceremony.—A joint engine-naming ceremony took place at Southampton Docks on January 24, when two new Southern Region "Merchant Navy" class engines were named *Holland-America Line* and *Holland-Afrika Line* by the respective Managing Directors of these companies, Mr. W. H. de Monchy and Mr. M. A. Pelt. The engines are the second and third of a new series of ten which are being built at Eastleigh Works, and, like their predecessors in this class, are the most powerful on the Southern Region. Among those present at the naming ceremony were Mr. J. H. Reuchlin, Secretary, Holland-America Line, Colonel R. A. F. Smith, Manager of the London Passenger Office, Mr. C. Kreuger, Passenger Department, Holland-Afrika Line, and Mr.

W. F. Charles, Consul for the Netherlands. The Southern Region was represented by Mr. R. P. Biddle, Docks & Marine Manager, presiding, supported by Mr. R. M. T. Richards, Deputy Chief Regional Officer.

Catering Inspector Required.—Applications from qualified candidates are invited for the post of catering inspector, grade II, required by the East African Railways & Harbours for the transportation department, for one tour of 40 to 48 months, with prospect of permanency. See Official Notices on page 111.

British Railways at Schoolboys' Exhibition.—With reference to the paragraph on this exhibition on page 26 of our January 7 issue, we are asked to state that, while the model railway referred to was designed by two specially selected employees of British Railways, certain components and some of the rolling stock were purchased or borrowed from manufacturers.

S.G.E. Dramatic Society Presentation.—On Thursday and Friday last, January 20 & 21, at Hirst Hall, G.E.C. Estate, North Wembley, the Siemens & General Electric Railway Signal Co. Ltd. dramatic society, "The Diamond Players," presented the comedy "Lovers' Leap," by Philip Johnson. The four characters, out of a cast of five, who held the stage almost continuously for over two hours, are to be congratulated on a very fine performance, notwithstanding the apparent smallness of the audience in so large a hall.

British Transport Joint Consultative Council.—Formed last month to exchange information and views on matters of common interest in relation to inland transport and the work of the B.T.C. and its Executives, the British Transport Joint Consultative Council held its first meeting on January 25. Sir Cyril Hurcomb, Chairman of the Commission, presided, and, together with members of the Commission and its five Executives, there were present eleven trade union representatives from the

National Union of Railwaymen, the Associated Society of Locomotive Engineers & Firemen, the Railway Clerks' Association, the Transport & General Workers' Union, and the Confederation of Shipbuilding & Engineering Unions. The Council will meet quarterly and the Joint Secretaries appointed are Mr. Frank Gilbert and Mr. Arthur Deakin.

South African Railways Earnings.—For the period November 28 to December 25, 1948, earnings of the South African Railways amounted to £5,747,820, compared with £5,239,064 in the corresponding period of last year.

Railway Students' Association.—Mr. A. E. Bates, Carriage & Wagon Works Superintendent, Derby, London Midland Region, will read a paper on: "The Construction & Building of Railway Carriages," at a meeting of the Railway Students' Association, London School of Economics & Political Science, to be held on February 9.

Important Spanish Railway Contract for Britain.—A contract for over 1,000,000 ft. of locomotive boiler and flue tubes has been placed with Tube Investments Limited by the Spanish National Railways. These tubes, which will be manufactured by the subsidiaries, Tubes Limited, Aston, Birmingham, and Howell & Co. Ltd., Sheffield, are required in connection with a major overhaul of locomotives now being completed.

Irish Mail Bags Rifled.—When the Irish Mail arrived at Chester on the morning of January 21 it was found that six bags had been opened and that between 40 and 50 registered packets were missing. The bags had been put on the train at Euston, when the train left at 8.40 p.m. the previous night, and British Railways police believe that they were opened between Rugby and Crewe. Opened packages and wrappings were later found strewn about the railway line between Rugby and Lichfield.

Derailment near Hebden Bridge Station.—The locomotive, five coaches, and a fish van, forming part of the 9.25 a.m. train from Normanton to Manchester, London Midland Region, on Sunday, January 23, were derailed near Hebden Bridge Station (almost exactly where an express was derailed in 1912). No injuries other than shock were received by the passengers. It is thought that a damaged rail may have been the cause of the derailment. The line was blocked for about eight hours.

Milne Report Recommendations.—At a public meeting in Loughrea, Mr. S. MacBride, Irish Minister for External Affairs, said "The Government has not yet had an opportunity of considering in full Sir James Milne's Report on Transport in Ireland, but you can take it for granted its recommendations in relation to the retention of branch lines will be carried out. Mr. D. Morrissey, Minister for Industry & Commerce, has returned from the U.S.A. and a statement of Government decisions on the report may be made shortly. The Dail is due to re-assemble on Wednesday, February 16.

British Transport Commission's Staff.—In our last week's issue we reported Sir Cyril Hurcomb's reply to Mr. Roland Bird's paper, "Some Transport Problems Examined" read before the Institute of Transport on January 17. Towards the end of his remarks Sir Cyril Hurcomb said that the total staff employed by the Commission was 160 of whom nearly 100 were clerks, typists, and messengers. One-third

Southampton Engine-Naming Ceremony



Mr. W. H. de Monchy, Managing Director of the Holland-America Line, naming the "Holland-America Line" locomotive at Southampton on January 24. The above group shows (left to right) Mr. R. M. T. Richards, Deputy Chief Regional Officer, Southern Region, Mr. W. H. de Monchy, and Mr. R. P. Biddle, Docks & Marine Manager (see paragraph above)

OFFICIAL NOTICES

Crown Agents for the Colonies

APPLICATIONS from qualified candidates are invited for the following post:—

WHARF FOREMAN required by the Nigerian Government Railway for one tour of 18 to 24 months, with prospect of permanency. Salary and expatriation pay £600 rising to £800 a year; commencing salary according to age and experience. Outfit allowance £60. Free passages and liberal leave on full salary. Candidates, not over 35, must have thorough practical knowledge of Port Warehouse and Wharf working, also Port Yard working at a large depot. They must be able to supervise Wharf and Yard staff and be experienced in loading and handling of out-of-gauge loads. Apply at once by letter stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting M/N/22211/3E on both letter and envelope.

Crown Agents for the Colonies

APPLICATIONS from qualified candidates are invited for the following post:—

OFFICE ASSISTANT required by the East African Railways and Harbours for the Chief Mechanical Engineer's Office, Tanganyika, for one tour of 24 to 48 months in first instance. Salary £590 rising to £690 a year. Commencing pay according to age and experience. Outfit allowance £30. Provident fund terms. Free quarters and passages. Candidates, age 25 to 30, must possess a General Schools Certificate and have had good general and/or accounting experience on a British Railway, preferably in a Mechanical Engineering Department. Knowledge of Road Motor Service Engineer's section would be an advantage. Candidates must be able to supervise and compile the accountancy and costing records appertaining to the Department. Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting M/N/21927 (3E) on both letter and envelope.

Crown Agents for the Colonies

APPLICATIONS from qualified candidates are invited for the following post:—

SENIOR DRAUGHTSMAN (ENGINEERING) required by the East African Railways and Harbours for 2 to 4 years, with prospect of permanency. Salary £710 a year rising to £810 a year. Free passages and quarters. Superannuation fund. Candidates must have a sound knowledge of engineering works and building construction, and of the design of structural steel and reinforced structures. A knowledge of railway yard layout an advantage. Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting M/N/23736 (3D) on both letter and envelope.

RAILWAY MAINTENANCE PROBLEMS

By H. A. Hull (late District Engineer, L.M.S.R.). Valuable information. With much sound advice upon the upkeep of permanent way. Cloth, 8½ in. by 5½ in. 82 pp. Diagrams. 5s. By post 5s. 3d.

MOTOR GENERATOR SETS

ONE—by Canning, comprising 60 volt, 400 amp., d.c. GENERATOR (C.P. type) with exciting generator, 110 volt, 5 amps., driven by 39 h.p. motor, 1,430 r.p.m. S.R. B.B., for 400/3/50 supply.
One—by Mawdsley, comprising 3½ kW, 220 volt, 16/18 amp. GENERATOR, S.P. B.B., Shunt wound with Field Regulator, driven by 7½ h.p. Crompton Parkinson motor, 1,440 r.p.m. S.C.S.P. B.B., for 200/230/1/50 supply.
One—by Canning, comprising 6 volt, 350 amp., d.c. GENERATOR driven by 4 h.p. motor, 1,450 r.p.m. S.C.S.P. B.B., for 440/3/50 supply.
One—by E.E.C., comprising 5 kW, 440 volt, 11.5 amp. d.c. GENERATOR, shunt wound, driven by 8 h.p. Brooks motor, 1,500 r.p.m. S.C.S.P. B.B., for 400/3/50 supply.

COX & DANKS LIMITED,

Plant & Machinery Dept.,
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11-H.P. 220-volt D.C. STARTERS by Allen West. Drum type, weatherproof. Incorporating hand operation, interlocked mechanically. N.V. & O.L.'s, ammeter, signal lights, line contactor, starting resistance integral. As new. 26 available.
40-h.p. 220-volt D.C. STARTERS by Allen West. Drum type, weatherproof. Incorporating hand operation, interlocked mechanically. N.V. & O.L.'s, ammeter, signal lights, line contactor, starting resistance integral. As new. 19 available.
50-h.p. D.C. STARTER by Met. Vick. 440/500 volts. Hand operated, face plate type, totally enclosed. N.V. & O.L. Coil incorporated.
AUTO STARTER PANEL by Igranic Co. for two 7½-h.p. 500-volt D.C. motors. P.B. operated starting and reversing. Integral resistances. Each starter controlled separately. Floor mounted cubicle type with external P.B. and ammeters.

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 'Phone: Feltham 3471.

RUSTON & HORNSBY DIESEL LOCOMOTIVES. 4-wheel, 24-in. gauge, 3-speed gear-box, forward or reverse, with Lister 2-cylinder vertical water-cooled engine, 600 r.p.m.

Two—20 h.p. Overall dimensions 8 ft. 6 in. long, 3 ft. 2 in. wide, 6 ft. 4 in. high, with driver's cabin 3 ft. 8 in. x 3 ft. 2 in. x 4 ft. 8 in. high.
Three—10 h.p. Overall dimensions 9 ft. long, 3 ft. 2 in. wide, 5 ft. high. Open type.
 Condition equal to new, ready for immediate use. May be inspected at our works.

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MECHANICAL APPLIANCES FOR HANDLING

RAILWAY TRAFFIC. By G. Bulkeley. An explanation of the employment of mechanical apparatus for handling and carrying general goods. Cloth. 7½ in. by 5 in. 132 pp. Illustrated. 5s. By post 5s. 3d.

the numerical unit provides subtraction, sub and grand totals, and net balances, over all 36 columns of the card. The tabulator prints 80 complete lines a minute on continuous stationery or on individual sheets. It can be used in association with all standard 36-column equipment.

Revised Iron and Steel Prices.—Subsequent to the recent increases in the price of spelter, nickel and chrome, the Minister of Supply has made the Control of Iron & Steel (No. 68) Order, 1949, which amends the maximum prices of certain iron and steel products. The principal alterations are for galvanised sheets, galvanised hot finished tubes, galvanised wire nails, stainless steel and nickel bearing alloy steels. Copies of the Order (S.I. 1949 No. 12) may be obtained from H.M. Stationery Office, or through any bookseller.

Air Services to the Continent.—After conferring with representatives of 16 Midland local authorities on the future of Elmdon Airport, Birmingham, on January 11, Lord Pakenham, Minister of Civil Aviation, announced the first step in what he said might be big developments at the airport. Lord Pakenham said that arrangements had been completed for two aircraft a day to fly between Manchester

None of the vacancies on this page relates to a man between the ages of 18 and 50, inclusive, or a woman between the ages of 18 and 40, inclusive, unless he, or she, is exempted from the provisions of the Control of Engagement Order, 1947, or the vacancy is for employment excepted from the provisions of that Order.

DRAUGHTSMAN, with knowledge of Rolling Stock, required for firm in North Midlands.—Reply to Box 261. c/o The Railway Gazette, 33, Tophill Street, London, S.W.1.

Docks & Inland Waterways Executive

APPLICATIONS are invited for the post of Assistant Solicitor on the Headquarters Staff of the Docks & Inland Waterways Executive, at a commencing salary of £1,000 per annum, according to age and experience. Knowledge of modern statute law is required, and previous experience as a Solicitor in the service of a public authority would be an advantage. The candidate selected will, where eligible, be expected to join a Contributory Superannuation Scheme, and in this respect to comply with whatever provisions are decided upon later for the Executive's staff as a whole.

Applications accompanied by relevant particulars must be delivered to the Secretary at the offices of the Executive, 22, Dorset Square, London, N.W.1, not later than February 11, 1949.

Docks & Inland Waterways Executive

APPLICATIONS are invited for the post of Staff and Establishment Officer on the Headquarters staff of the Docks & Inland Waterways Executive. Applicants should have experience of negotiations with Trade Unions and Staff Organisations and knowledge of the industrial agreements for the docks and inland waterways industries is desirable. Commencing salary £1,250 per annum, rising by increments to £1,500 per annum. The candidate selected will, where eligible, be expected to join a Contributory Superannuation Scheme and in this respect to comply with whatever provisions are decided upon later for the Executive's staff as a whole.

Applications accompanied by relevant particulars must be delivered to the Secretary at the offices of the Executive, 22, Dorset Square, London, N.W.1, not later than February 11, 1949.

Crown Agents for the Colonies

APPLICATIONS from qualified candidates are invited for the following post:—

CATERING INSPECTOR, Grade II, required by the East African Railways and Harbours for the Transportation Department, for one tour of 40 to 48 months, with prospect of permanency. Salary £590 rising to £690 a year. Outfit allowance £30. Free quarters and passages. Candidates, not over 35 years of age, must have had general catering experience in hotels, preferably with one of the large groups. Knowledge of restaurant car working (particularly in the Tropics) an advantage. Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting M/N/22201/3E on both letter and envelope.

of the total staff was in the financial and statistical departments. In an editorial note on page 58 we stated inadvertently that "nearly 100 are in the financial and statistical department," instead of 50.

Popularity of Excursion Facilities.—Since August, 1948, when day, half-day and evening excursion tickets were reintroduced, no fewer than 2,572,499 passengers have availed themselves of these facilities on the London Midland Region of British Railways.

Expansion of the Hungarian Railway System.—During 1947, the Hungarian railway system increased in extent by about 12 per cent., from 1,733 to 1,938 route-miles, and 1,531 new passenger coaches and 18,000 new goods wagons were placed in service.

Scottish Motor Traction Transfer.—An agreement has been reached whereby, subject to confirmation by the stockholders, the passenger road transport undertaking of the Scottish Motor Traction group will be acquired by the British Transport Commission. The issued capital of S.M.T. consists of £1,000,000 of 6½ per cent. cumulative preference stock and £1,005,978 15s. (4,023,915 5s. units) ordinary stock. The

effect of the settlement is that the B.T.C. acquires the remaining half of the transport interests for about £10½ million and also pays a sum of approximately £3 million for minority interests in subsidiary companies. The Commission receives £1,650,000 for its share of the non-transport assets.

Institute of Transport, Metropolitan Section.—Mr. W. L. Ives will read a paper entitled: "Inland Waterways as Affected by the Transport Act, 1947," at a meeting of the Institute of Transport, Metropolitan Section, to be held at Livingstone House, Broadway, London, S.W.1, at 5.30 for 6 p.m. on Monday, February 7.

New Powers - Samas Accounting Machine.—The Powers-Three Tabulator, a new punched-card accounting machine, was exhibited recently at the head offices of Powers-Samas Accounting Machines Limited, at Powers-Samas House, Holborn Bars, London, E.C.1. The new machine has a printing capacity of 35 sectors, consisting of one numer-alpha unit of 25 sectors, and one numerical unit of 10 sectors, which give a maximum capacity of £999,999 19s. 11½d. The numer-alpha unit prints numerical and alphabetic designations (including names and addresses), and

and Paris, which was double the service last summer and four times the service at present operating; one aircraft would be operated by Air France and the other by British European Airways. By Easter, one of these aircraft would be calling at Elmdon Airport each day. It would be a "Dakota" with 25 seats, and to make the service a commercial proposition, 18 people must use it each day. This would be reviewed in six months.

Ulster Transport Authority.—According to a traffic return issued on January 14, Ulster Transport Authority receipts for the week ended January 9 and the same period last year were:—

	1949	1948
Passenger	£50,373	£44,178
Goods	£24,797	£24,285
Total	£75,170	£68,463

The aggregate receipts for 14 weeks to date were:—

	1949	1948
Passenger	£751,349	£635,676
Goods	£367,255	£329,040
Total	£1,118,604	£964,716

Forthcoming Meetings

January 31 (Mon.).—Institute of Public Administration, at Livingstone Hall, Broadway, London, S.W.1, at 6.15 p.m. Organisation of Large Scale Activities: "The British Transport Commission," by Mr. Miles Beevor, Chief Secretary & Legal Adviser, British Transport Commission.

February 1 (Tue.).—Institution of Civil Engineers, Great George Street, Westminster, S.W.1, at 5.30 p.m. "The Design and Strength of Standard Flat-Footed Rail and Fishplate Sections," by Mr. A. M. Sims. "Practical Considerations in regard to the Design of Flat-Bottom Rail Track," by Mr. N. W. Swinnerton.

February 1 (Tue.).—Institute of Transport, Humberstone Section, at 7.30 p.m. "The Construction of a Locomotive," by Mr. J. F. Harrison, Assistant Chief Mechanical Engineer, British Railways, Eastern & North Eastern Regions.

February 2 (Wed.).—Institution of Railway Signal Engineers, at the Westinghouse Brake & Signal Co. Ltd., Chippenham, Wiltshire, at 7.30 p.m. "Signalling Relays," by Mr. J. F. Tyler.

February 2 (Wed.).—Belfast Association of Engineers. "Modern Trends in Lubrication," by Mr. S. F. Chisholm.

February 3 (Thu.).—York Locomotive Society, at the Railway Institute, York, at 6.45 p.m. "Colour Light Signalling," by Mr. R. J. Purves.

February 3 (Thu.).—British Railways (Western Region) London Lecture & Debating Society, in the Clerks' Dining Club, Bishop's Bridge Road, Paddington, at 5.45 p.m. Prize Essay Competition: Reading & Discussion.

February 3 (Thu.).—British Railways (Southern Region) Lecture & Debating Society, at the Chapter House, St Thomas' Street, London Bridge, at 5.45 p.m. "Welfare Work on the Southern Region," by Mr. J. H. Chitty, Welfare Officer, British Railways, Southern Region.

February 4 (Fri.).—Institution of Railway Signal Engineers, in the London Transport Executive Signal School, Earls Court Station, S.W.5, at 6.15 p.m. "Signalling Relays," by Mr. J. F. Tyler.

Railway Stock Market

Moderate business only was reported. Long-dated stocks were wanted in the gilt-edged section, with 2½ per cent. Consols and Treasury Bonds still favoured by institutional buyers, while the new Electricity stock was active and 3 per cent. Transport (1978-88) strengthened to 100½. Short-dated stocks moved slightly lower on balance. Belief is that British Funds may move higher despite the small yields. It is assumed in some quarters that the authorities wish to keep 3 per cent. Transport (1978-88) at over par.

The industrial market appears to offer little scope because of dividend limitation, and prevailing belief that the Budget is unlikely to bring any material easing of taxation. As a result, there is a tendency to favour colliery shares and other securities offering capital return or pay-out possibilities. It is not surprising that speculative activity is reviving in Brazil rails. This applies particularly to Great Western of Brazil shares which have further advanced to 116s. 3d. However, after earlier gains Leopoldina stocks attracted profit taking, and after touching 11 the ordinary eased to 10½, while the preference stock was 37½ after rising to over 38. The 4 per cent. debentures rose to 82½. Leopoldina Terminal 5 per cent. debentures at 75½ were also higher on balance. The view has gained ground that in the event of take-over developments the debenture stocks of the Leopoldina and Leopoldina Terminal would probably offer much better scope for capital appreciation than the junior stocks. San Paulo ordinary stock eased to 159 although it is still hoped that during Senhor Machado's visit the need for a final settlement of compensation for the San Paulo Railway will be urged.

Antofagasta changed hands around 9½ and the preference stock at 56½. United of Havana 1906 debentures were steadier at 13 and Central Uruguay ordinary was

marked up to 11½. Manila Railway "A" debentures were 84 and the preference shares 8s. 9d. Beira Railway bearer shares were firmer at 46s. Canadian Pacific at 23 were unaffected by the reported \$20,000,000 bond issue. Buenos Ayres Central 4½ per cent. debentures have changed hands around 37½, the second debentures up to 19½, and 6½ per cent. notes up to 19½. International of Central America 5 per cent. first bonds marked 151 and Paraguay Central prior lien debentures 41. Vera Cruz Terminal 4½ per cent. debentures have transferred at 39½.

Shares of road transport companies remained more active and Scottish Motor Traction were up to 113s. on talk that take-over terms may be announced soon. Northern General Transport marked 5½ and Southdown were close on £8. Tilling showed a further moderate gain at 124s. 4½d., and some market calculations are that the shares are probably worth 130s. if more than the short view be taken. British Electric Traction stock moved back sharply to £1,890. Prevailing belief is that negotiations are unlikely to be initiated by British Electric Traction and that the take-over of assets may have to be decided on the basis of the terms laid down by the Transport Act. It is being suggested that whether the B.E.T. transport interests are to be acquired by British Transport may depend on the result of the next election.

Tube Investments at slightly over £6½ have been firm as a result of the contract from the Spanish Railways. Shares of locomotive builders and engineers, however, showed movements not exceeding more than a few pence, apart from Charles Roberts, which marked £6½. Vulcan Foundry were 26s. 9d., North British Locomotive 24s., and Beyer Peacock 23s. 9d. Gloucester Wagon came back to 61s. 3d. Wagon Repairs 5s. shares marked 21s. 4½d. and G. D. Peters 5s. shares 17s. 6d.

Traffic Table of Overseas and Foreign Railways

	Railways	Miles open	Week ended	Traffics for week		No. of week	Aggregate traffics to date	
				Total this year	inc. or dec. compared with 1947/48		Total	Increase or decrease
							1948 9	
South & Central America	Antofagasta...	811	16.1.49	£ 64,170	+ £ 12,510	2	£ 187,710	+ £ 42,750
	Bolivar ...	174	July, 1948	\$28,960	+ \$69,357	30	\$471,287	+ \$301,893
	Brazil ...	...	...	32,712	+ 2,978	18	595,105	+ 7,652
	Cent. Uruguay ...	970	6.11.48	35,992	+ 1,696	22	179,839	+ 17,492
	Costa Rica ...	281	Nov., 1948	32,667	+ 8,367	48	305,908	+ 19,292
	Dorada ...	70	Nov., 1948	44,300	+ 1,900	2	83,900	+ 14,700
	G.W. of Brazil ...	1,040	15.1.49	\$1,094,493	+ \$44,021	48	\$12,165,251	+ \$211,814
	Inter. Ctl. Amer. ...	794	Nov., 1948	\$115,163	+ \$25,985	52	\$1,273,516	+ \$19,091
	La Guaira ...	22½	Dec. 1948	47,846	+ 10,414	2	102,794	+ 22,776
	Leopoldina ...	1,920	15.1.49	19,608	+ 3,123	12	67,355	+ 16,721
	Midland Uruguay ...	319	Sept., 1948	15,065	+ 1,379	2	15,065	+ 1,379
	Nitrato ...	382	15.1.49	5,686	+ 1,23	12	16,335	+ 1,989
	N.W. of Uruguay ...	113	Sept., 1948	\$117,661	+ \$16,951	28	\$2,916,345	+ \$1,063,982
	Paraguay Cent. ...	274	14.1.49	205,440	+ 21,029	26	1,160,130	+ 134,011
	Peru Corp. ...	1,059	Dec., 1948	c82,000	+ c1,400	18	c329,000	+ c13,400
	Canada	Salvador ...	100	Oct., 1948
San Paulo ...		153½	...	8,900	+ 510	26	47,420	+ 6,680
Taltal ...		156	Dec., 1948	\$204,065	+ \$99,219	28	\$6,019,060	+ \$2,215,427
United of Havana ...		1,301	15.1.49	1,072	+ 52	12	3,308	+ 111
Uruguay Northern ...		73	Sept., 1948	...	...	...	...	...
Canadian National...		23,473	Aug., 1948	10,110,000	+ 855,250	35	77,676,250	+ 5,854,000
Canadian Pacific ...	17,037	Nov., 1948	8,533,000	+ 1,724,250	48	81,043,000	+ 8,547,750	
Various	Barsi Light*	202	31.12.48	25,875	+ 277	39	246,667	+ 20,355
	Beira ...	204	Oct., 1948	126,338	+ 10,322	4	126,338	+ 10,322
	Egyptian Delta ...	607	20.12.48	23,669	+ 2,203	38	532,935	+ 109,048
	Gold Coast ...	536	Nov., 1948	246,162	+ 84,582	35	1,648,016	+ 459,522
	Manila ...	...	...	...	...	...	...	...
	Mid. of W. Australia	277	Nov., 1948	30,031	+ 10,295	22	143,744	+ 35,685
	Nigeria ...	1,900	Oct., 1948	517,794	+ 108,107	29	3,143,917	+ 638,481
	Rhodesia ...	2,445	Sept., 1947	643,980	+ 102,833	52	6,787,603	+ 612,938
	South Africa ...	13,347	1.1.49	1,156,160	+ 48,658	39	53,041,438	+ 3,254,870
Victoria ...	4,774	June, 1948	1,358,791	+ 248,144	52	...	...

* Receipts are calculated @ 1s. 6d. to the rupee